ASBPE MAGAZINE OF THE YEAR 2004

On the Mark: A means of preventing insider data theft arrives from Russia. PAGE 10
Make certain you're aware of the rights and obligations of open-source, says Maryfran Johnson. PAGE 16

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AUGUST 30, 2004 • VOL. 38 • NO. 35 • $5/COPY

MATTHEW FAULKNER

Is Your Data Safe Offshore?

ONLINE EXCLUSIVE
Indians face the offshoring backlash:
49105

We went to India and China, the two hottest offshore outsourcing destinations, to find out. Our on-location coverage from Bangalore and Shanghai begins on **page 6.**

Key Financial Firms Compare Notes on Disaster Recovery

BY LUCAS MEARIAN

A group of top financial services companies confirmed last week that their IT executives have met to share current disaster recovery schemes and discuss future technology recovery strategies. And what they found was that they had a lot in common — including headaches.

"To start with, I found out I'm not alone. All banks are struggling with this," said Todd Baumann, director of enterprise business continuity at Huntington Bancshares Inc. in Columbus, Ohio.

The Technology Recovery Project involved an information exchange among eight banks (see list, page 14). IBM, Microsoft Corp. and Veritas Software Corp. also participated in the project, which was organized by the New York-based Financial Services Technology Consortium and took place between November 2003 and June of this year.

The banks and bank holding companies looked at mainframe, open systems and stor-

Disaster Plans, page 14

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App Tests for Win XP SP2 Burden Users

Most delay installing XP security update

INSIDE
Early SP2 adopters got extra help.
PAGE 45

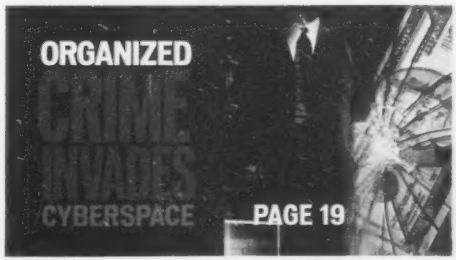
BY CAROL SLIWA

Microsoft Corp.'s Service Pack 2 is an important security-focused update for corporate users running Windows XP. But in the three weeks since its release, it's been a tough pill for many to swallow, as they struggle to test tens, hundreds and, in some cases, at least 1,000 applications against it.

Only two of 32 IT managers who responded last week to a *Computerworld* survey conducted via e-mail and telephone said their companies had deployed SP2, and in both cases they did so as part of Microsoft early-adopter programs. The majority said they're still testing SP2 to determine its compatibility with the applications their companies run.

"As we get closer to the holidays, we don't make changes of this significance because we don't want to disrupt our environment so close to our

SP2, page 45



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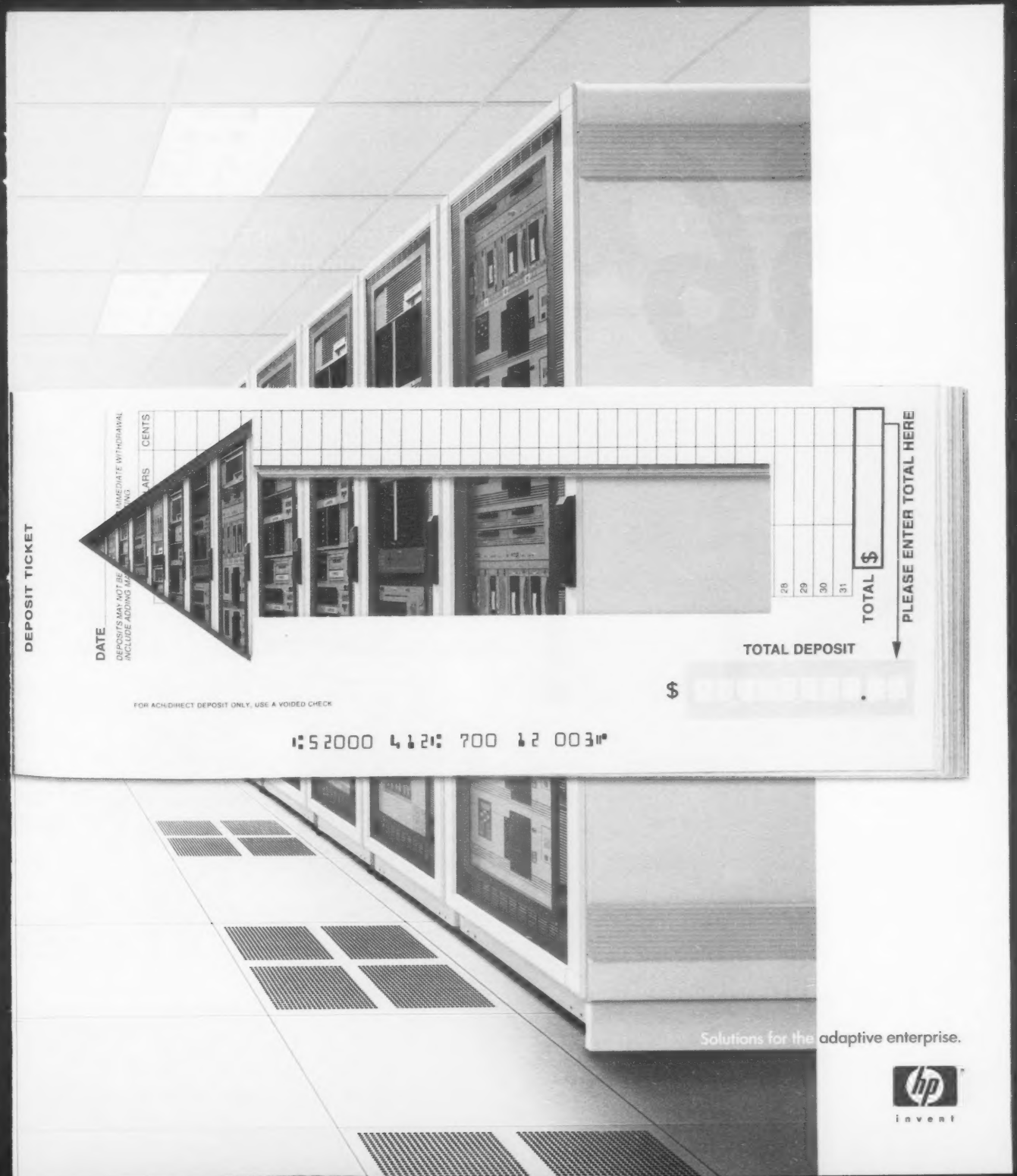
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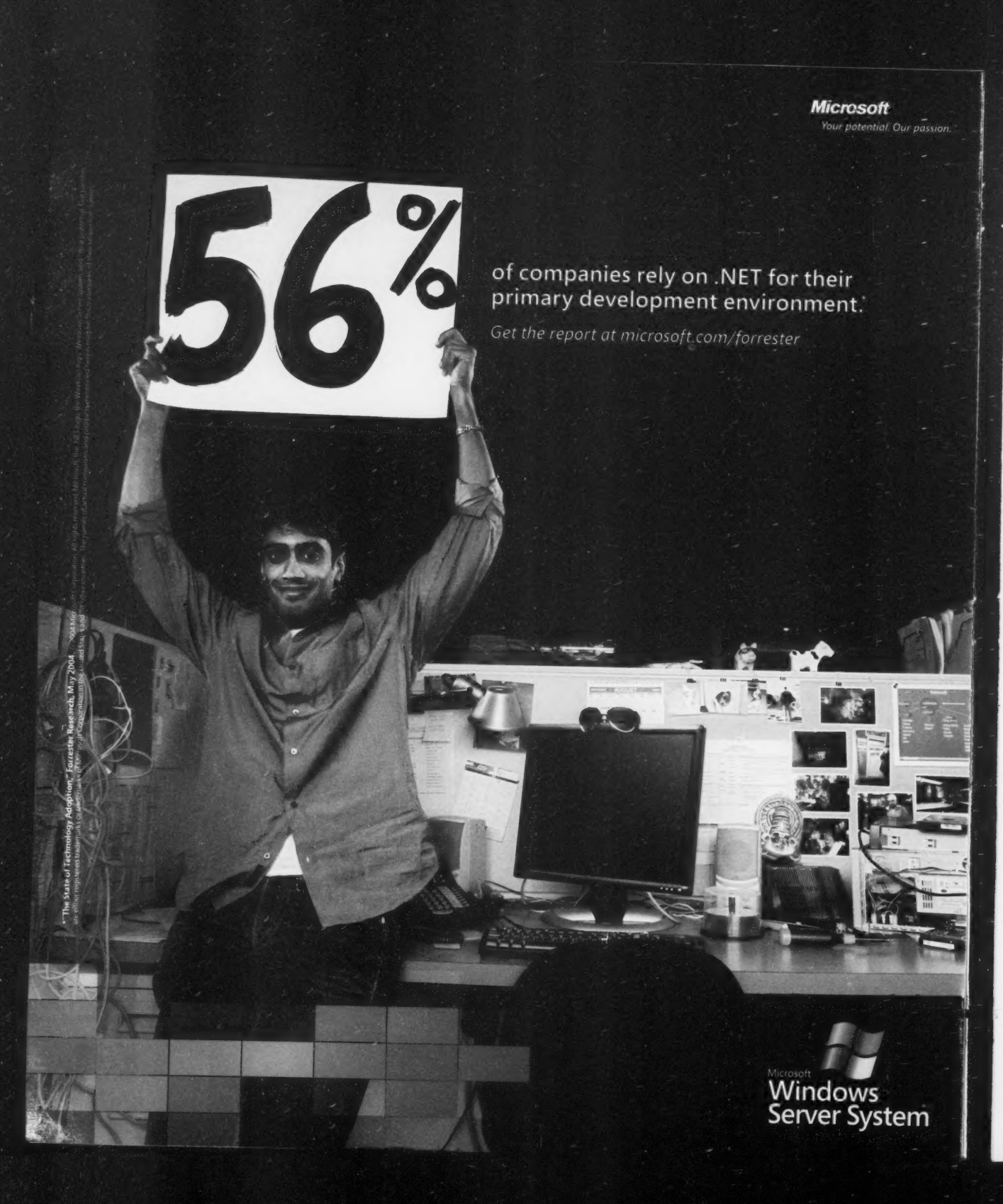
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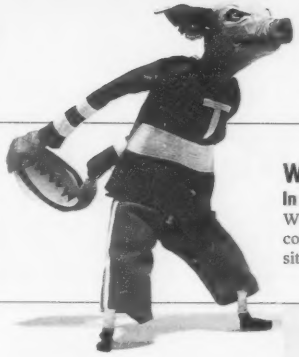
OPINION

Encryption Must Move Beyond SHA

In the Technology section: Bruce Schneier says recent progress in breaking the MD5 and SHA hash functions means it's time to find a new hash standard. **Page 28**



Who Owns the Web?

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Is Your Data Safe Offshore?

In India, IT outsourcers are bolstering security in response to demand from U.S. clients. And Chinese service providers are trying to overcome their country's reputation as a haven for software piracy. Page 6

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13 **The TSA plans tests** of new airport security technologies, but lawmakers and industry executives are frustrated by the slow pace of deployment.

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16 **Maryfran Johnson** sees something big in Duke Power's decision to give its framework for .Net development to the open-source community. But the move raises questions about licensing that all IT managers should investigate.

16 **Dan Gillmor** thinks Microsoft should use some of its billions in reserves to ensure that the next PC you buy doesn't need immediate XP upgrades.

17 **Pimm Fox** has some advice for the agency behind the anti-terror "no-fly" list: Get the technology right.

38 **Gopal K. Kapur** says project managers tend to point to two key causes of project failures: half-baked or harebrained ideas and excessive scope creep. What's his solution? Just say no.

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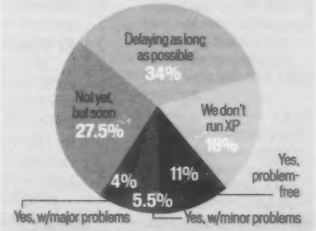

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Phishing: Are You Responsible?

IT MANAGEMENT: Those e-mails trying to con customers into parting with sensitive information may not be connected to your company, but washing your hands of the mess is bad for business, says new IT Ethics columnist Larry Ponemon. QuickLink a4920.

Apple Remote Desktop 2 'Well Worth the Money'

MACINTOSH: Columnist Yuval Kossovsky takes Apple Remote Desktop 2 out for a spin and finds that its new management features make it an upgrade that's worthy of consideration. QuickLink 48931

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Security Expectations, Response Rise in India

INCREASINGLY TOUGH DEMANDS FROM U.S. CLIENTS SPARK CHANGE.

BY JAIKUMAR VIJAYAN BANGALORE

A TALL ELECTRIC FENCE secures the perimeter of Wipro Technologies' main campus in Bangalore's Electronic City. Inside, just behind the sliding steel gates, is a checkpoint where security personnel issue photo-ID badges to all visitors.

Card keys and biometric authentication devices control access to the various development centers in sleek buildings dotting the landscaped campus. Closed-circuit TVs provide constant surveillance.

At the same time, an invisible perimeter of event logging and monitoring tools, intrusion-detection systems, firewalls and encryption technologies protects the company's information infrastructure.

Such measures are what's needed to allay security concerns for U.S clients outsourcing work to Wipro, said J. Pazhamalai, information security manager at the $1 billion IT services vendor. "Data security and privacy used to be an afterthought," Pazhamalai said.

"Now customers are talking about it right at the RFP stage itself. They want a security plan with the proposal."

MATTHEW FAULKNER

Wipro and other Indian outsourcing vendors are bolstering their security and privacy practices in response to U.S. concerns stemming from the compliance requirements of laws such as Sarbanes-Oxley, Gramm-Leach-Bliley and HIPAA. The key threats include unauthorized data access, accidental information loss and sabotage, loss of intellectual property, and damage from worms and viruses.

A growing number of companies "are seeking stringent contractual guarantees related to the security and privacy of data that could be remotely accessed as part of IT application development, testing or [business process outsourcing]," said Rusi Brij, CEO of Hexaware Technologies Ltd., a Mumbai-based service provider with facilities in Bangalore. "They are demanding documented, auditable procedural controls."

HEXAWARE TECHNOLOGIES LTD.

VIDEO MONITORING is used extensively by Indian service providers.

Regulatory compliance is what's driving much of the need for such measures, agreed Ram Mouli, vice president of technology planning and development at T. Rowe Price Group Inc. The Baltimore-based investment management firm, which manages assets worth more than $206 billion, has outsourced several application development projects to India.

"New regulations from the SEC and other regulatory agencies have created a need for several internal controls for application development, change control and maintenance," Mouli said. "These controls have to be extended offshore and monitored."

The result is "tremendous scrutiny right now on data security, access controls and privacy" related to offshore work, said the chief technology officer of a Chicago-based service provider for the financial industry who spoke on condition of anonymity. "Some of our customers have asked us to fill out extraordinarily detailed questionnaires in which they ask us to attest to our security controls so they in turn can include that in their compliance documents," he said.

> **"The ability for employees to carry data out of the facility is minimized to what they can carry in their heads."**
>
> **SUNIL GUJRAL,** VICE PRESIDENT OF TECHNOLOGY, WIPRO SPECTRAMIND

The trend is resulting in a much greater focus by both U.S. companies and their Indian vendors on issues such as security certifications and audits, identity management and application provisioning, and on detailed event logging and monitoring activities (see "Security Checklist," page 7).

There's no question that security expectations have risen sharply, said S. Gopalakrishnan, chief operating officer at Bangalore-based Infosys Technologies Ltd., one of India's largest IT services vendors, with revenue of more than

A Painfully Slow Process

JOLLY TECHNOLOGIES INC., a San Carlos, Calif., maker of labeling products for the printing industry, is finding out the hard way just how tough it can sometimes be to enforce intellectual property (IP) protections in India.

In May, the company set up a small software development center in Mumbai. Among the approximately 20 people it hired in the western India city was a software engineer who in mid-July was caught uploading substantial chunks of Jolly source code to her Yahoo personal e-mail account.

The woman, who admitted the theft, was immediately fired, and a complaint was filed with the Mumbai police department soon afterward, said Brett Changus, Jolly's chief financial officer.

"Unfortunately, that's pretty much where things are, even now," Changus said last week. "The police there appear to be having a hard time comprehending what IP is and how important it is to us."

As a result, more than a month after the complaint was filed, no action has been taken against the woman, Changus said. In frustration, the company earlier this month decided to file a lawsuit against the Mumbai police department over its alleged failure to take action in the case.

"There are IP protection laws there, but so far, we have received zero protection," Changus said.

The Mumbai police could not be reached for comment.

The incident has prompted Jolly to reassess its India strategy, Changus said. "We obviously took whatever pre-

JAYACHANDRAN VIJAYAN

PHYSICAL SECURITY measures at major outsourcing service providers include guarded entrances.

$1 billion. "It's become a lot more explicit now. We've had to improve on and formalize a lot of things" from a data security standpoint, he said.

One example is a backup storage site that Infosys recently established outside India in nearby Mauritius. All client backup tapes are shipped weekly to the site as a precaution. In addition, each client has been assigned a standby backup facility in an alternate location, Gopalakrishnan said.

Indian business process outsourcing (BPO) companies, which typically handle a lot more sensitive information when servicing their clients than pure IT development shops, take extra precautions.

Wipro Spectramind, a $95 million BPO subsidiary of Wipro, prohibits employees from carrying mobile phones or pens and paper to their work areas. "The ability for employees to carry data out of the facility is minimized to what they can carry in their heads," said Sunil Gujral, vice president of technology.

As with other BPO outfits and many IT development shops, at Spectramind, any ports and devices that can be used to store or copy data are disabled on all PCs and notebooks that employees might need to use to deliver services for U.S. clients. A majority of its call center agents access customer systems via barebones Citrix Systems Inc. terminals that provide no avenue for data to be stored or copied.

"[Spectramind] only has the ability to view [our] data," said Chris Larsen, CEO of E-Loan Inc., a Pleasanton, Calif.-based online provider of consumer loans that has outsourced a portion of its back-office home-equity underwriting functions to Spectramind. "They do not have the ability to store, share, print or retain data in their India-based computers and systems."

E-Loan also uses a variety of technologies from companies such as Tripwire Inc. and open-source tools like Nagios to monitor and log activity at Spectramind, Larsen added.

Ongoing Risks

Despite the measures to bolster security, the relative dearth of security professionals in India, the breakneck growth of its IT industry and an onerous legal system continue to pose risks that must not be overlooked, cautioned Samir Kapuria, an analyst at @stake Inc., a Cambridge, Mass.-based consultancy.

Much of the growth in Indian IT jobs over the past few years has been in areas such as application development and maintenance, rather than in a "niche job" such as IT security, Kapuria noted.

On paper at least, India has several laws that cover data security and privacy issues. The most prominent one is the Indian Information Technology Act of 2000, which makes the unauthorized use of data a punishable offense. But timely enforcement of such laws could prove difficult, given the excruciatingly slow pace of the country's legal system. That poses a significant threat from an intellectual property protection standpoint, Kapuria said.

Moreover, the distance factor can help conceal risky practices, especially when dealing with smaller firms. For example, a fast-growing BPO company that was recently moving to a larger facility decided to move some of its servers to a nearby Internet cafe, where it connected to its U.S. clients, because of a delay in the opening of its new facility.

And although the practice appears to be rare, Indian firms have been known to subcontract work out to companies in other countries without the knowledge of the U.S. client and with none of the security measures that might have been originally agreed upon.

But the reputable providers appear to have gotten the security message from their clients. It's no longer enough for Indian companies to "simply say they are addressing the issue," Gopalakrishnan acknowledged. "They've got to be able to show how they are addressing it." **49098**

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Security Checklist

- **REQUIRE** Indian vendors to have their development centers audited by established firms or be certified under international data security and audit standards such as BS7799 or SAS70. Many companies also reserve the right to do spot audits and checks.
- **ENSURE** the use of encryption, firewalls and intrusion-detection systems to deal with malicious attacks. To watch for insider threats, companies have begun mandating content-filtering tools and event logging and monitoring technologies on the networks connecting U.S. clients with their Indian providers.
- **CONDUCT** rigorous background checks on employees and require them to sign confidentiality agreements prohibiting the disclosure of proprietary information when they leave the company.
- **FOCUS** on physical security and access-control systems, business continuity and disaster recoverability. Many companies insist on off-site storage and alternate sites.

cautions we could. But if we can't protect our IP, there is no way we can do business there," he said. "People have to know that they just can't steal confidential information and get away with it."

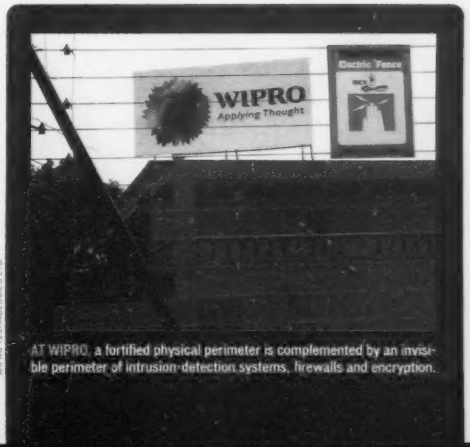
India's IT trade organization, the New Delhi-based National Association of Software and Service Companies (Nasscom), is acutely aware that the country's flourishing IT industry could be damaged if data protection can't be enforced.

The organization recently launched an education campaign aimed at judicial and police authorities as well as the ministries of IT and law, association vice president Sunil Mehta said. The idea is to create a much broader awareness of the need for enacting legislation that can be more easily enforced.

Nasscom is also working with IT companies to build a database that vendors can use to more quickly and reliably verify an employee's professional education and other background information, Mehta said.

The global database will be compiled with input from Nasscom's members but won't be used as an instrument for blacklisting employees, he said.

– Jaikumar Vijayan



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AT WIPRO, a fortified physical perimeter is complemented by an invisible perimeter of intrusion-detection systems, firewalls and encryption.

Overcoming the Piracy Stigma in China

PROVIDERS 'OVERCOMPENSATE' FOR THE RISK. BY SUMNER LEMON SHANGHAI

WALK into the access-controlled room full of software developers at Bleum Inc.'s headquarters here and you can't miss the slogan written in large blue and black letters that stretches across the far wall: "Protect our customer."

The message is there to serve as a constant reminder for Bleum's team of English-speaking software engineers of the importance of keeping clients' software code secure, said Eric Rongley, the outsourcing service provider's founder and CEO.

Concerns about the protection of intellectual property and proprietary corporate data are hardly unique to China. But the security risks are greater here than in locations such as India or Eastern Europe, Rongley said. "It's definitely in the interests of a company here to overcompensate for it," he said.

China's poor reputation for intellectual property protection stems largely from the widespread availability of pirated DVD movies and software. Last month, the Business Software Alliance in Washington estimated that 92% of software used in China during 2003 was unlicensed and illegal. That figure tied the country with Vietnam for the dubious distinction of having the world's highest piracy rate.

But a high piracy rate for packaged applications doesn't inherently place outsourced software development projects at risk, said Chen Lingsheng, vice president of greater China at BearingPoint Inc., calling security concerns in China overblown. Outsourcing projects to companies in China can be as secure as it is anywhere else, he said.

"We had a major financial client from the U.S. come over here to do a security audit before they would give us a project, and we passed the audit," Chen said, noting that BearingPoint follows the same security procedures in China that it uses in the U.S.

In addition to conducting security audits, those procedures include strictly enforcing nondisclosure agreements and restricting development work to facilities that require a keycard for access.

BearingPoint and other outsourcing service providers in China are willing to go even further to meet their customers' security demands. For example, BearingPoint developers have access only to code and project documentation.

"As an outsourcing service provider, we take it very seriously to protect our clients' secrets and business data," said Walter Fang, group vice president and chief technology officer at Neusoft Group Ltd., a Chinese software company based in the northeastern city of Shenyang. Neusoft employs 1,500 developers who work on outsourcing projects at several locations in China.

Neusoft allocates separate buildings for major clients such as Toshiba Corp. and Alpine Electronics Inc., and it restricts access to the buildings to staff working with those companies, Fang said.

On-site offices are available to each client's project managers, and Neusoft can provide them with individual phone lines rather than company extensions, he said.

Aside from physical security measures, Fang said foreign companies can build effective legal protections into their contracts with outsourcing providers in China. For example, Neusoft's contracts with its Japanese clients are typically designed to be enforceable in both Japan and China while offering an avenue for arbitration with a third party under Hong Kong law, he said.

For companies that want to keep a closer eye on outsourced development projects, BearingPoint has offered to install video cameras to monitor work in project rooms at its facilities in Shanghai and the northeastern Chinese city of Dalian, Chen said.

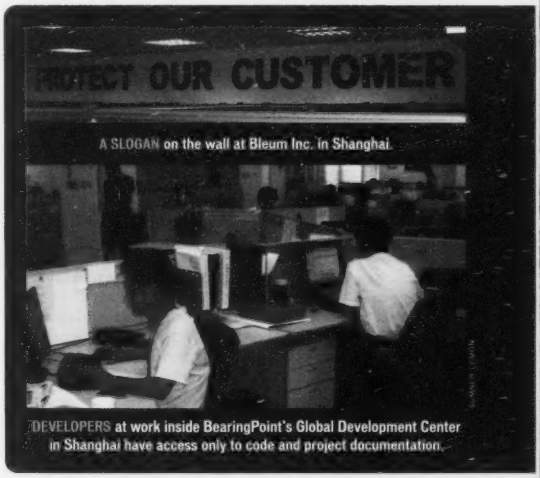
At Bleum's highest level of security, Rongley said, the company offers a "shadow group" of developers who are given financial incentives to uncover vulnerabilities in software developed by the lead development team.

The shadow developers examine the code for security holes such as back doors or opportunities for buffer overflows that would allow attackers to run executable code.

While these and other measures may help to guarantee the security of a customer's code and data, the best way to improve intellectual property protection in China is to change cultural attitudes, according to Rongley. He noted that service providers can advance the cause through training sessions and staff meetings.

And even slogans on the wall. **49092**

Lemon is the IDG News Service correspondent in Taipei.



A SLOGAN on the wall at Bleum Inc. in Shanghai.

DEVELOPERS at work inside BearingPoint's Global Development Center in Shanghai have access only to code and project documentation.

Lead writer: Jaikumar Vijayan ■ Contributing writer: Sumner Lemon
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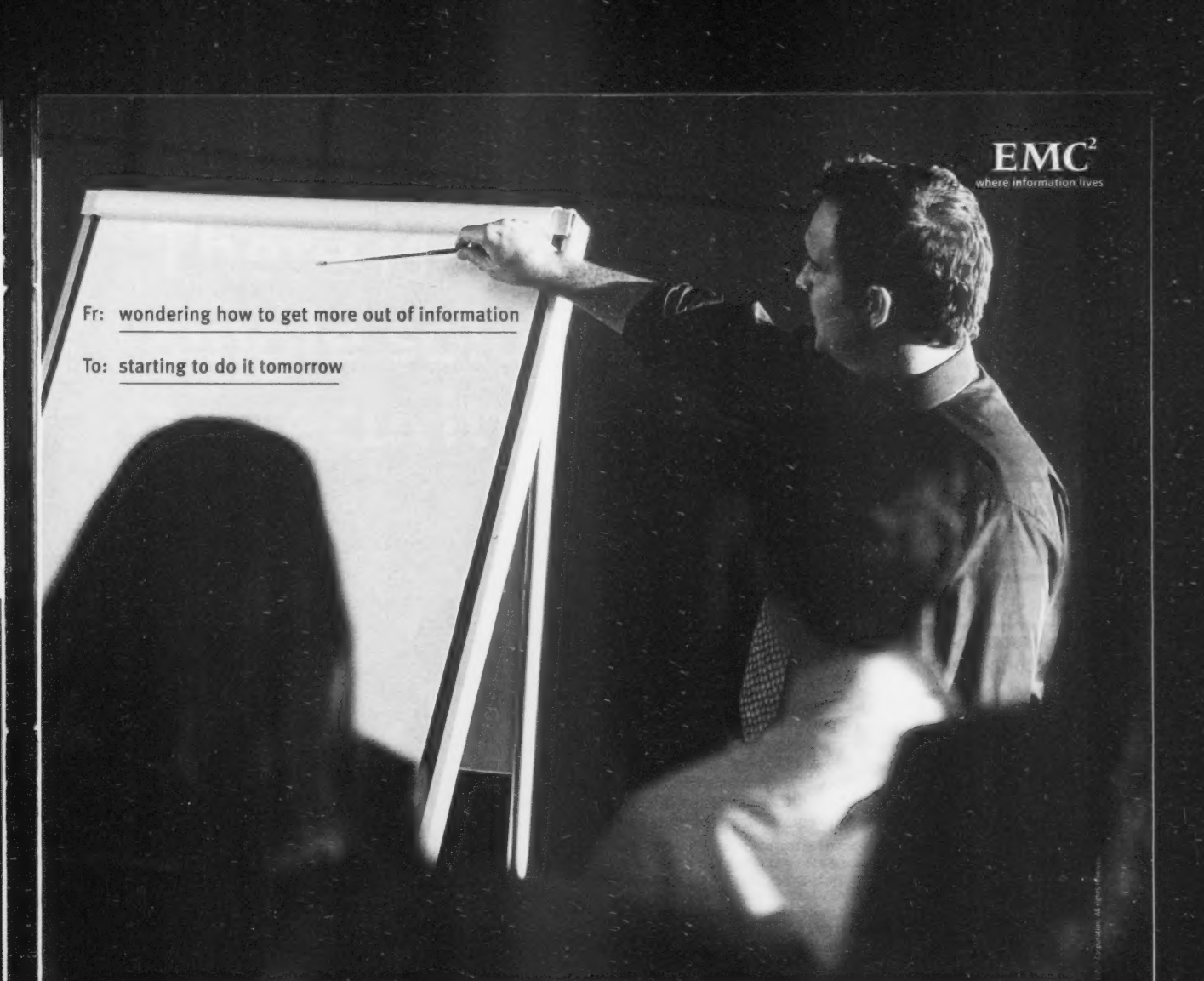

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AT DEADLINE

Storage Subsystem Out of Longhorn

Microsoft Corp. announced Friday a change in plans for the next major release of Windows, which is code-named Longhorn. The new Windows storage subsystem, code-named WinFS, won't be part of the Longhorn client, as previously planned. Microsoft said WinFS will be delivered after the Longhorn release. The company said the Longhorn client is targeted for generally availability in 2006. It said it expects the Longhorn server release to be available in 2007.

Cisco Warns of Two Security Flaws

Cisco Systems Inc. last week warned about security holes in two products that provide user authentication and authorization services: the Cisco Secure Access Control Server for Windows, and the Cisco Secure Access Control Server Solution Engine. Cisco recommended that customers with service contracts obtain the updates using the Cisco Product Upgrade Tool or by contacting its Technical Assistance Center.

Oracle Again Moves Offer for PeopleSoft

Oracle Corp. on Thursday filed another extension in its hostile $7.7 billion bid to acquire PeopleSoft Inc., this time pushing the deadline ahead two weeks to Sept. 10. Oracle said it now has 21.7 million tendered shares – 6% of PeopleSoft's outstanding total.

U.K. Agency Adopts Sun's Java Desktop

The U.K.'s National Health Service last week said it purchased 5,000 licenses for Sun Microsystems Inc.'s Java Desktop System as an alternative to Windows. The NHS is spending $9 billion to upgrade its IT infrastructure. It began evaluating the use of Sun's open-source desktop system in December.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

MATTHEW FAULKNER

Tune In to New Ways to Steal . . .

. . . critical corporate information. So warns Gartner Inc. in a report detailing how data crooks can use portable music players like Apple Computer Inc.'s iPod to rob you blind [QuickLink 47983]. Vladimir Chernavsky, CEO of AdvancedForce InfoSecurity Inc. in San Ramon, Calif., amplifies that concern by including Bluetooth devices, floppy disks, CDs and virtually anything that can store data and use a pair of legs to leave the premises. "Someone carrying a hard drive out of a building would be suspicious, but carrying an iPod is not," he observes. "Now everyone is potentially James Bond." As you would expect, Chernavsky has a solution: DeviceLock. His company has the exclusive North American rights to sell the software from its Russian authors at SmartLine Inc. DeviceLock is designed to prevent data from being written to any device type. But it's flexible enough that you can, for example, permit Universal Serial Bus keyboards to be used, but not USB storage systems. A new release coming in November will let you centrally log the files that you do permit to be written to a mobile device, so you'll know whether an executive is updating his Bluetooth unit's contact list or downloading your entire customer file. It runs $35 for a single license, but that price can fall to less than $7 when you get 1,000 or more licenses. Think of it as a little something from Russia with love.

Kill Spam Before . . .

PETRY: Service providers are the best way to stop spam.

. . . it reaches your network. That's the wisdom from Scott Petry, chief technology officer and founder of Postini Inc. in Redwood City, Calif. He claims that his service stops 50% of the 400 million e-mails destined for his customers' networks every day, because they're spam. "If you're blocking them at your gateway, it's much more expensive," he says. He argues that service providers such as Postini are more efficient because they can see "the SMTP conversation" on the Internet and quickly identify and remove spam- and virus-laden messages. Petry says privately held Postini is profitable, growing at close to 180% this year and looking to acquire companies in what he expects will be a rapidly consolidating market over the next year.

Event-Driven Data Gets Pushed . . .

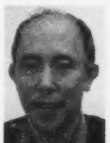
. . . to users' screens with publish-and-subscribe tool. KnowNow 3 from KnowNow Inc. in Sunnyvale, Calif., eliminates the need for end users to request reports on data generated across the HTTP-based networks. The server software "dual posts" requested data and immediately directs it to a user's screen or to an application. For example, upon completing an online form, a Web visitor can be instantly sent to an available customer service agent, or sales data entered in an ERP system can be immediately sent to a sales executive's desktop spreadsheet. Version 3, which ships at the end of next month, includes a new module for Microsoft SharePoint systems, more granular event filtering and added database support. Pricing starts at $15,000.

Tech Support Goes Remote . . .

. . . with a hosted service from Citrix Systems Inc. GoToAssist 6.0, which is set for release on Sept. 14, lets your technical service reps remotely view and control the PCs of end users who are baffled by the behavior of their Windows machines. The upgrade includes nifty improvements such as giving technicians the ability to remotely reboot a machine and then retain the link to the user's PC after the restart in case the problem persists. There's no need for the troubled end user to have client software, so customer support can be handled on an ad hoc basis. Each session is 128-bit encrypted for secure communications. The service works for both desktops and servers, and Citrix is planning Linux and Unix support in the coming months. Pricing starts at $325 per month per tech-support agent, with a one-time start-up charge of $700. There are no session fees or end-user time limits for the GoToAssist service.

300k Monthly user support sessions handled by Citrix GoToAssist.

Forget Centralized Directory Efforts . . .



PROMPT: Virtual directories are the solution.

. . . because they're doomed. There are just too many sources with too many methods and schemas scattered throughout your company to get under control. So, should you just give up? Maybe not. Michel Prompt, CEO of Radiant Logic Inc. in Novato, Calif., claims that a virtual directory is the solution. "Trying to centralize and create the überdirectory has been a big failure," he says. "But virtualization works." In effect, your users query the virtual directory, which handles the protocol and other differences among the various directories linked to it. Radiant One 4.0, which ships this week, can even virtualize Web services. By October, when 4.1 ships, Radiant will release federated security services that will authenticate users and their rights across multiple directories. Expect to pay about $50,000 to sidestep nonvirtual doom. **49095**

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Microsoft

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BRIEFS

HP's Virus Throttler Service Is Shelved

Six months after unveiling technology designed to choke off the spread of viruses, Hewlett-Packard Co. is shelving the project. The company won't be releasing a security service called Virus Throttler because it requires operating system changes that are incompatible with Windows, HP said last week.

Cisco to Purchase P-Cube for $200M

Cisco Systems Inc. said last week it has agreed to acquire Sunnyvale, Calif.-based software developer P-Cube Inc. in a deal that Cisco valued at $200 million. Cisco plans to continue selling P-Cube's software, which helps service providers analyze and control network traffic, as standalone products. The company said it will also work on incorporating the technology into its own hardware and software.

U.S. Forest Service To Cut 500 IT Jobs

The U.S. Department of Agriculture Forest Service is cutting the equivalent of 500 full-time IT jobs in a reorganization of its IT department. Forest Service employees won a competitive sourcing contract to manage the IT department. The workers had bid against undisclosed private companies for the contract, which is valued at $295 million. The Forest Service expects to save approximately $100 million over the five years the agreement is in place.

Short Takes

The U.S. POSTAL SERVICE signed a $35 million contract with SAP AMERICA INC. for a Web-based human resources application. . . . MICROSOFT CORP. said it has finished work on Microsoft Operations Manager 2005, a major update to its MOM 2000 performance management software.

SEC Deadline Delay Signals Sarb-Ox Relief

Should help ease transition to new reporting mandates

JUST THE FACTS

What happened: On Aug. 26, the SEC announced a proposal to postpone for one year an accelerated filing period for large companies to submit quarterly and annual reports.

What it means: The current deadline for so-called accelerated filers will remain at 75 days for annual reports and 40 days for quarterly reports. Accelerated filers will have 60 days to file annual reports and 35 days to file quarterly reports for fiscal periods that end after Dec. 15, 2005.

Why it matters: The accelerated-filer postponement is expected to make it easier for big companies to document their financial and IT controls in annual reports after Nov. 15, in accordance with Section 404 of the Sarbanes-Oxley Act.

BY THOMAS HOFFMAN

THE U.S. SECURITIES and Exchange Commission last week announced that it will delay an accelerated filing period for annual reports — a move expected to help big companies transition more easily to year-end reporting requirements under the Sarbanes-Oxley Act.

In 2002, the SEC made a change to the Securities Exchange Act of 1934 that shortened the amount of time companies would have to file their quarterly and annual reports after the end of a fiscal period.

The filing requirements for companies with a market capitalization of $75 million or more shrank from 90 days within the close of a business cycle to 75 days this year. It was scheduled to be cut to 60 days next year.

But sources close to the issue said the SEC was being pressured by big accounting firms to maintain the 75-day filing requirement for one more year to help big companies make their first transition to a year-end Sarbanes-Oxley deadline. Under the SEC proposal issued last week, the current deadline for so-called accelerated filers would remain at 75 days for annual reports and 40 days for quarterly reports. The accelerated-filing phase-in period would resume for reports filed for fiscal years ending on or after Dec. 15, 2005. SEC registrants have 30 days to comment on the proposal.

Under Section 404 of the Sarbanes-Oxley Act of 2002, large companies must document in their annual reports the financial and IT controls they have in place for fiscal years that end on or after Nov. 15, 2004.

Big Four Weigh In

The nation's Big Four accounting firms recently asked the SEC "that they not push [the filing requirement] to 60 days, at least for the moment, to help companies deal with these current pressures," said Marios Damianides, international president of the Information Systems Audit and Control Association and the Information Technology Governance Institute, both in Rolling Meadows, Ill.

For the past few weeks, rumors have been swirling that the SEC might extend the deadline for public companies to meet Section 404 requirements. But sources said those rumors are unfounded and were based on misinterpretations of recent comments made by SEC officials; Section 404 enforcement delays aren't anticipated. An SEC spokesman declined to comment.

"[The SEC has] already postponed Section 404 deadlines twice. If they keep backing down and do it a third time, people are going to question their credibility," said Tim Welu, CEO of Paisley Consulting Inc., a company in Cokato, Minn., that develops software for managing audits of both IT and financial controls.

"I think they'd only extend the accelerated filing period," said Eric Clarke, internal audit director at Bresler & Reiner Inc., a Rockville, Md.-based real estate investment trust. "If they keep extending the deadline for meeting Section 404 requirements, it won't do anything for investor confidence." **49101**

Regulatory Demands Put Spotlight On Asset Management Practices

Bresler & Reiner Inc. has found itself placing a lot more emphasis on IT asset management practices as a result of pressing regulatory compliance demands.

Earlier this year, the Rockville, Md.-based real estate investment trust installed an industry-specific accounting software package that's used by its various property management companies. The package was supplied by Beaverton, Ore.-based Timberline Software Corp., said Eric Clarke, Bresler & Reiner's internal audit director.

To help meet regulatory requirements such as the Sarbanes-Oxley Act, "we want to make sure financial information on our software and servers is adequately safeguarded and that we have an adequate disaster recovery plan in place for each site," Clarke said.

Indeed, regulatory requirements are forcing IT managers to track their IT assets more closely, said Jane Disbrow, an analyst at Gartner Inc. "If you don't know where all your laptops and software are located, how can you tell regulatory bodies that customer information is being kept private?" she said.

IT asset management concerns are just making their way onto Zebra Technologies Corp.'s regulatory radar screen. IT asset management "is something that is on our Sarb-Ox list a month or so into the future," said Todd Naughton, vice president and controller at the print components supplier in Vernon Hills, Ill.

Sarbanes-Oxley is having a two-pronged affect on IT asset management practices. Under Section 404 of the act, companies are required to attest to the internal controls that are used for financial reporting. These include IT-related controls that firms have in place to effectively track and monitor hardware, plus software used to support financial reporting. Companies are also required under Sarbanes-Oxley to disclose to regulators all material financial exposures they have, including IT equipment leases and licensing agreements, which have to be tracked closely.

A soon-to-be-published survey of 220 IT decision-makers by Boston-based AMR Research Inc. found that companies that consider regulatory compliance the top business issue affecting their security spending cite the need to invest in auditing and asset-tracking tools as their No. 1 security budget priority.

– Thomas Hoffman

MORE SARB-OX

For additional information, visit our special coverage page:

QuickLink a3250
www.computerworld.com

Legacy Army Payroll Systems Buckle Under Weight of War

GAO audit finds that 95% of 348 active reservists have had problems with pay

BY MARC L. SONGINI

The war in Iraq has helped push antiquated U.S. Army payroll systems past their breaking point, leading to widespread problems for reservists, according to a U.S. Government Accountability Office report issued this month.

So severe are the problems caused by the aging, stand-alone Cobol-based mainframe systems that the GAO audit found that 95% of 348 mobilized reserve soldiers had at least one payroll problem. The glitches included both overpayments and underpayments, as well as delayed disbursements. Some troops had numerous payroll problems, and it took more than a year to correct some of them.

Both the system itself, called the Defense Joint Military Pay System-Reserve Component (DJMS-RC), and the attendant human processes are "so error-prone, cumbersome and complex" that the soldiers affected can't be assured of timely and accurate payment for duty served, said the GAO study. The result has been a "profound adverse affect on individual soldiers and their families," it said.

System Limitations

One major weakness stems from a lack of integration between the DJMS-RC and related U.S. Army personnel applications. The payment system was also hampered by processing limitations, requiring "significant manual effort" to make up for the shortcomings.

The GAO cited one case in which a soldier received an overpayment of $24,000 when a revocation of his mobilization status wasn't automatically reported to the payroll system due to the gaps between the personnel system and the DJMS-RC. And because of the DJMS-RC's computational limits, accounting for variables such as hardship duty requires manual input.

The Defense Finance and Accounting Service (DFAS), which oversees the DJMS-RC, has acknowledged that the system is "aging, unresponsive, fragile and a major impediment to efficient and high-quality customer service," according to the GAO.

Increased Risk of Error

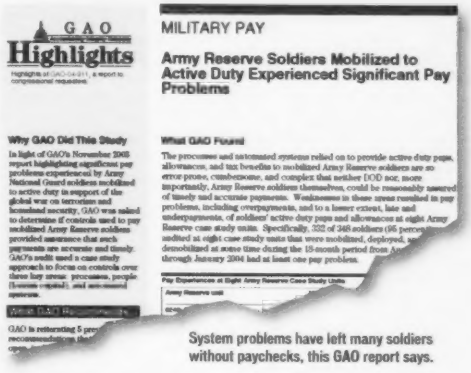
A DFAS spokesman said the DJMS-RC's limitations were exacerbated by the war in Iraq; prior to the war, the system primarily handled pay for drilling exercises and not for the 12- or 18-month deployments now taking place in the Middle East. "Anytime a system requires human intervention, you increase the risk," the spokesman said.

Acknowledging the system's limitations, the Defense Department has launched a training program for support personnel and is rolling out an improved payroll system based on PeopleSoft Inc.'s PeopleSoft Enterprise, which will begin to go live next spring.

Once in place, the application will integrate the pay processes for reservists and active Army personnel and end the need for manual workarounds while improving stability and eliminating many of the problems identified by the GAO, said the spokesman.

That system will later be phased out in favor of the larger Defense Integrated Military Human Resources System (DIMHRS), which was first announced in August 2001 and is also built on PeopleSoft [QuickLink a4940]. Eventually, the human resources and payroll applications will function as a single integrated system, although progress on the DIMHRS implementation has been slow [QuickLink 41815].

While "significant design work has been completed" on the DIMHRS project, extensive testing will be required before implementation can begin, said Norma St. Claire, a DOD director of joint requirements and integration. Deployment to the Army, the first branch to go online, will start in the first quarter of 2006, she said. St. Claire added that while the DOD wants the software to be as "vanilla" as possible, "sometimes there are mission requirements that are not supported by the commercial product, and a few modifications will be needed." 49108


GAO
Highlights
MILITARY PAY
Army Reserve Soldiers Mobilized to Active Duty Experienced Significant Pay Problems
Why GAO Did This Study
What GAO Found
Pay Experiences at Eight Army Reserve Case Study Units
GAO is reiterating 5 pre
System problems have left many soldiers without paychecks, this GAO report says.

TSA Readies Security Systems Rollout

BY DAN VERTON
WASHINGTON

The Transportation Security Administration last week announced a series of pilot tests of IT-based programs to bolster airport security. And TSA Administrator David M. Stone said the agency is only "days or weeks" away from deploying a revamped version of its controversial passenger-screening system.

The TSA selected two additional airports — the Norman Y. Mineta San Jose International Airport and the Helena Regional Airport in Montana — to participate in its Access Control pilot program. That brings the total number of airports in the program, which began in April, to 10.

The pilot program will test a wide range of technologies, including radio frequency identification (RFID) systems, antipiggybacking systems, advanced video surveillance technology and various biometric systems. The goal of the tests, which will run through the end of the year, is to identify technologies that allow only authorized airport personnel and vehicles to access secure areas of an airport.

The announcement was welcomed by members of Congress, who expressed frustration with the pace of technology efforts to support homeland security. At a hearing of the House Transportation and Infrastructure aviation subcommittee last week, lawmakers urged Stone not to let a desire to find the perfect technology delay the deployment of something that is "good enough" for now.

Some lawmakers and airline industry executives argued that TSA programs have been hindered by a lack of standards for biometric technologies and a government bureaucracy that remains incapable of sharing information and setting priorities three years after the Sept. 11, 2001, terrorist attacks.

"Many airports are willing to deploy biometric technologies but are reluctant to do so until the Department of Homeland Security issues guidance and makes clear what types of biometric systems will meet its standards in the future," said Rep. John Mica (R-Fla.), chairman of the House Aviation subcommittee. "Someone at DHS just needs to make a decision, and the rest will fall into place."

Capt. Duane Woerth, president of the Air Line Pilots Association, said that when his organization began working with the IT industry and the government to establish a biometric standard, it expected the effort to take about six months.

"Every airline employee [had his] background checked and was fingerprinted three years ago," said Woerth. "Three years later, we don't have anything. Three years later, we're told we might have a pilot program. That's unacceptable." 49109

THE ASSOCIATED PRESS
A PASSENGER is screened at a boarding gate at San Jose International Airport.

Continued from page 1

Disaster Plans

age networking environments.

Firms were asked what recovery strategies they use, what they consider to be best practices and what cost/risk trade-offs and regulations are driving their strategies. They were also asked what investments in disaster recovery they will make in the next year.

For security reasons, the banks were unwilling to share specific strategies publicly, but Baumann said a common concern was the need to find a data recovery methodology that's efficient and scalable and meets the needs of internal customers.

"We'd all like to have an open checkbook to do everything right now. We'd like to do it at a price tag our companies are willing to spend," Baumann said. "It's not so much getting the money. It's putting together the right business case to say, 'Here's why we should be doing this.' "

Cost Pressures

Virginia Garcia, an analyst at TowerGroup in Needham, Mass., said the discussion is unique among financial services firms, which have been squeamish about sharing IT data because they consider it a competitive advantage.

But with disaster recovery spending totaling 1% to 2% of financial firms' budgets — that's roughly $2 billion per year for U.S. banks — building business continuity through best practices is becoming a necessity.

"This spending is growing well into double digits — an increase of 17% a year," Garcia said. "There's a very concerted effort in the banking industry to get a better handle on risk management spending at the operational level."

Charles Wollmen, managing executive director of the FSTC's business continuity standing committee, said there were several revelations from the project. For example, banks said they are more tightly integrating recovery activities into IT systems design and incorporating them into day-to-day production practices. Companies are also moving toward more automation to reduce recovery times and eliminate human error.

Garcia agreed with those findings, saying banks are quickly moving away from tape backups and choosing disk-to-disk mirroring of data over wide geographic areas.

Firms also said they're moving toward internal bunker data centers and away from third-party recovery service providers such as SunGard Data Systems Inc. and IBM.

The companies all said they want to spread their primary and backup data centers farther apart to deal with regional power outages. "Having the data centers five miles away is not going to be good enough," Wollmen said. "They'd like to . . . have data centers farther apart and still be able to do the backups and not lose data. It's more the issue of you want your cake and eat it too."

One idea floated by the banks in conjunction with longer-distance replication of data was to share physical disaster recovery facilities in remote locations, which would spread out the cost of building and running hot sites. "But the other issue is that you have so much at stake in these large data centers," Wollmen said. "If sharing IT increases, then risk would be a concern. So it's a balancing act involving risk and cost."

The FSTC plans to meet again on Oct. 6 to further discuss disaster recovery initiatives needed in the financial services industry. **49106**

Participating Banks

- Huntington Bancshares Inc.
- Bank of America Corp.
- Wachovia Corp.
- BankOne Corp.
- Comerica Inc.
- US Bancorp
- J.P. Morgan Chase & Co.
- RBC Financial Group

Key Project Findings

- Banks are increasingly using higher levels of automation to minimize recovery complexity.
- Market dynamics are demanding that large firms provide faster recovery capabilities at lower cost and with less risk.
- Financial firms are increasingly integrating technology recovery capabilities into systems.
- Banks are giving increased consideration to large-scale disasters and are mitigating risks with multiple, wide-area recovery locations.
- Banks are moving toward internal recovery centers and away from third-party recovery centers.

SOURCE: FINANCIAL SERVICES TECHNOLOGY CONSORTIUM

CA Shareholders Back Management on Bonuses

Money paid to former executives won't be revoked

BY STACEY COWLEY

Computer Associates International Inc. avoided a revolt at its annual meeting last week, when shareholders voted down a proposal requesting that the company's board adopt a policy of revoking executive bonuses paid based on financial results that are later revised.

Submitted by Amalgamated Bank LongView Collective Investment Fund, the proposal came in the wake of an accounting scandal that devastated CA's management ranks and forced the company to restate $2.2 billion of revenue.

The Amalgamated Bank fund cited the scandal in a regulatory filing supporting its proposal. The fund took issue with the millions paid to executives — specifically, to former CEO Sanjay Kumar, who served as CA's president and chief operating officer at the time the fraud occurred — and with CA's board's silence about whether it will attempt to recoup those bonuses. Not doing so would be "a serious omission," the fund argued.

At the meeting, 76% of votes cast sided with CA, which opposed the proposal.

Unlike recent financial scandals at other companies, CA's didn't involve fictitious revenue. Rather, to meet the analyst and investor expectations, the company prematurely recognized sales that should have been booked later. Based on targets that later weren't met, CA awarded bonuses to top sales and management executives.

Amalgamated faced long odds on winning passage of the proposal. A small number of investors hold a significant percentage of CA's shares and traditionally vote with the company's management.

Also at CA's meeting, company chairman Lewis Ranieri said CA is considering interim CEO Kenneth Cron for the permanent spot. Cron initially said he wouldn't be a candidate in the company's CEO search.

CA is unlikely to fill its CEO vacancy before it resolves the continuing government investigation of its accounting fraud. The company has now expelled every executive implicated in the fraud as well as those in top management roles at the time criminal activity was perpetrated, but it remains subject to fines or other sanctions the government may impose as penalty for the corporate wrongdoing.

Ranieri said he is continuing to work with the government toward a settlement. Earlier this year, CA offered $10 million to settle the charges against it, but the company hasn't commented on the government's response to the offer. Ranieri also said CA is reviewing the issue of compensation paid to "certain officers" in prior years. **49102**

Cowley writes for the IDG News Service.

EMC Unveils NAS Devices

BY LUCAS MEARIAN

EMC Corp. today announced several network-attached storage (NAS) devices that can be used for backing up servers over Ethernet using Internet SCSI. EMC said it has boosted the performance on its NAS devices and improved ease of use of its graphical user interfaces.

Tony Asaro, an analyst at Enterprise Strategy Group Inc., said the revised interfaces make the NS family of NAS servers easy to manage, "even for nontechnical users."

That point wasn't lost on Lorie Beam, director of IT at law firm Smith, Anderson, Blount, Dorsett, Mitchell & Jernigan LLP in Raleigh, N.C. "If you have less technical people, but you have a need for them to manage things, it certainly helps," she said.

The NAS devices are certified as iSCSI targets by Microsoft Corp., which allows administrators to consolidate their servers running Microsoft server products and Linux.

Asaro lauded EMC for its introduction of the iSCSI protocol on its boxes, noting that NAS is better than a storage-area network for certain file-sharing applications. "And iSCSI makes sense in conjunction with NAS because they both use the same Ethernet infrastructure," he said, "making it easy to install and cost-effective." **49100**

Washington State Ferries Expands Wi-Fi Service for Passenger Use

BY BOB BREWIN

In a development that extends wireless WAN technology beyond fixed locations, Washington State Ferries plans to offer free Wi-Fi service to passengers on ferryboats on its high-traffic Seattle-area routes this fall.

IT director Jim Long said the ferry system recently finished testing Wi-Fi service on the *M/V Klickitat* on the Port Townsend-Keystone route, which connects the Olympic Peninsula to Whidbey Island, about 43 miles northwest of Seattle. Long said he would eventually like to have all 25 boats in the fleet connected to a wireless WAN that treats each "individual ferry boat like an office building" hooked up to a wired WAN. The fleet carries 26 million passengers per year between 20 ports of call.

That's exactly what Mobilisa Inc., now running a nearly yearlong test of Wi-Fi for Washington State Ferries, is delivering, according to Nelson Ludlow, CEO of the Port Townsend-based company. Mobilisa has installed a wireless WAN that treats about 400 square miles of Puget Sound "like one big WAN," with Wi-Fi service and wireless connectivity to the Internet available on ferryboats operating anywhere in the area. The Mobilisa tests are being funded by a $1 million grant from the Federal Transportation Administration.

Coverage Configuration

Ludlow said Mobilisa has installed a two-stage wireless system to provide coverage to Washington State Ferries. The first stage provides connectivity from the shore to the boats, with point-to-multipoint wireless gear from Sunnyvale, Calif.-based Proxim Corp. operating in the unlicensed 5.8-GHz band.

Proxim's Tsunami MP11a system supports mobile roaming, which is key to ensuring uninterrupted connectivity from the boats as they move from the coverage area of the fixed-link wireless antennas installed on one side of a route to antennas on the other side. The Port Townsend-Keystone run doesn't allow line-of-sight coverage, so it required the installation of two antennas on the Keystone side, Ludlow said.

Mobilisa also had to develop its own switching algorithms for the handoffs between the fixed-wireless shore stations, so the signal from the vessel could bounce from one shore antenna to another throughout its run. Ludlow said Mobilisa experienced few outages in its tests with the *Klickitat*, which began in April; an aircraft carrier blocked the signal on one day.

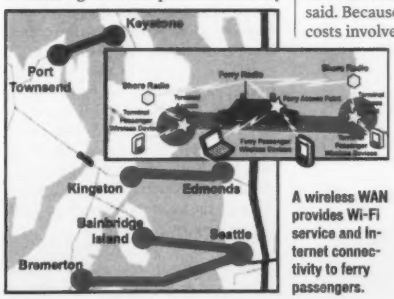
The Proxim equipment on the boats connects to BeaconPoint Wi-Fi access points from Chantry Networks Inc. in Waltham, Mass. The BeaconPoints offer Wi-Fi connections using the 802.11a standard, which operates in the 5-GHz unlicensed band, and the 802.11b/g standards, which use the 2.4-GHz band.

Mobilisa has also outfitted the ferry docks with Wi-Fi BeaconPoints, allowing passengers to use the service while waiting for a boat. The Port Townsend access point also covers restaurants near the ferry dock, Ludlow said. The BeaconPoints are hooked into Chantry's BeaconMaster wireless switch, which allows Mobilisa to control all the BeaconPoints on all the boats from the Mobilisa network operations center in Port Townsend.

The BeaconMaster 130, priced at $12,995, is a Layer 3 switch that allows passengers to roam from dock to boat and to the dock again without initiating a new Wi-Fi session, said Luc Roy, senior director of product marketing and management at Chantry.

The ferry system plans to issue a request for bids on a ferrywide system once the trials end next March, Long said. Because of the infrastructure costs involved, he said he expects any permanent Wi-Fi system to be fee-based.

Although the trial is focused on providing Wi-Fi service, Long said he anticipates using the network to support crews, including providing them with wireless voice-over-IP phone service, since cellular coverage for the boats is spotty. 49055



A wireless WAN provides Wi-Fi service and Internet connectivity to ferry passengers.

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MARYFRAN JOHNSON

Open-Source Obligations

SOMEONE in the open-source community should send a nice bottle of champagne to Charlie Ward, manager of technical architecture at Duke Power. What's worth celebrating? The way Ward and his crew of developers poured 1,000 hours into building a framework to support application development on Microsoft's .Net technology, then turned their work over to the open-source community ("Utility to Make IT Framework Open-Source," QuickLink 48960).

What made this front-page news for us last week was the significant size, relative rarity and potential impact of this corporate embrace of open-source. It's one thing for developers to turn over a few sanctioned pieces of corporate code to their open-source playmates. It's quite another for a major utility to throw open the doors to the results of a costly, complex software project.

Open-source just climbed up another rung on the enterprise ladder.

"This is somewhat of an experiment to see how much value can be gained from the open-source community," Ward said. Building a framework for application development doesn't give an energy company any particular competitive advantage, he observed, but getting continued support and improvements donated by a dedicated community of developers is clearly a benefit.

The appeal of open-source is rolling rapidly across the corporate landscape. More than 60% of 140 companies surveyed this spring by Forrester Research said they were either using or planning to use open-source products — everything from databases and development tools to Web servers and desktop software. And now the feds are officially encouraging open-source adoption across all government agencies.

"Open-source is just a more efficient, effective software business model," says John Roberts, founder of SugarCRM, one of the first open-source business application companies to attract venture funding. "It's more than just cheaper software. It's a shift, a movement reshaping the dynamics of a modern software company."

I think he's right about those fundamental shifts, which are also changing — and further complicating — the landscape of software licensing. For example, even at companies where open-source products aren't in evidence yet, the lines of responsibility are blurring as vendors fold portions of open-source code into their own proprietary products.

One CTO I spoke with last week had just encountered a novel situation with a new software package from a major vendor. His developers found a flaw in the code and alerted the vendor, which denied responsibility, saying that the piece of code containing the flaw was open-source. The customer argued for the fix and ultimately got it — but the experience raised a red flag for the CTO.

It should do the same for you. IT executives need to educate themselves about the rights and obligations involved in open-source — even if it's not in-house yet.

"What you need to look out for is what you give up" as well as what you gain in an open-source licensing agreement, says Larry Rosen, author of *Open Source Licensing: Software Freedom and Intellectual Property Law* (see "No Free Lunch," QuickLink 48482). If you choose to share your open-source development with other companies, for example, you may be obligated to use the same license with everyone.

It will be fascinating to watch how Duke Power proceeds with its open-source experiment, its licensing arrangements and the business value that comes from it. Here's hoping it'll be worth another bottle of champagne. **49072**

DAN GILLMOR

Microsoft Security's Weak Link

WINDOWS XP Service Pack 2 is now making its way onto computers. This major update is a step forward for a company that has had an abysmal record on security, and we should be happy for that much.

But it's only one overdue action. Users should also install more capable firewalls, antivirus software and anti-spyware applications. But the service pack also reminds us of a situation that Microsoft has never properly addressed: the retail/computer security problem.

If you buy a new Windows PC for your home and hook it up to a DSL service or a cable-modem line without first installing a hardware or software firewall, your computer could well be compromised by hackers before you've even had time to install Microsoft's "critical" security updates.

DAN GILLMOR is a columnist at the *San Jose Mercury News* and author of *We the Media: Grassroots Journalism by the People, for the People.* Contact him at

The PC may be turned into a spammer's toy, a zombie spewing thousands of mail messages per day, some of which could clog corporate networks. Or, worse, it may now have a keystroke logger in place, snarfing up personal and corporate log-ons and passwords and sending them who knows where.

This is a clear and present danger to corporate networks. If an infected home PC gets connected to the corporate network, via a VPN or other means, all the work IT does internally to keep things safe could be wrecked.

Yet this is reality. Why? Because Microsoft doesn't require computer makers and retailers to sell their PCs with totally updated operating systems. The computers likely will have XP with the most recent service pack, but no subsequent updates.

The same is true if you buy the Windows XP software by itself, in the box. It, too, will probably need updating to

be even remotely safe. In other words, despite monopoly profits and legions of talented programmers, Microsoft continues to allow retail versions of Windows to go out the door with known defects. Why?

Yes, there are complications in the retail channel. Microsoft and the manufacturers would have to put in a great deal more effort, and some added expense, to do the right thing. Given the wafer-thin margins in PC retailing, you can't expect the manufacturers or retailers to voluntarily take this on. That's why Microsoft should step in and do it for them.

At last count, Microsoft had more than $50 billion in cash. It plans to give some of that back to shareholders. Fine. But how about using some of it to make sure that computers sold at retail have the latest update of the operating system, with the firewall turned on?

Microsoft will never do that voluntarily. Its track record shows it to be a company that offloads as many costs as possible onto captive manufacturing "partners" that have no alternatives.

The logical people to intervene in this situation are state and federal consumer-protection officials. They'd never allow auto companies to sell cars with serious known defects. Why do they permit Microsoft and the PC makers to do so?

IT should be yelling from the rooftops about this. The situation is getting better only at the margins, and that's not nearly good enough. **48990**

PIMM FOX

Keeping the Skies Safe From Teddy

WHATEVER your political stripes, you would probably agree that Sen. Edward Kennedy (D-Mass.) is not a terrorist.

But when he tried to board a US Airways flight at Reagan National Airport near Washington this past spring, he was stopped because his name appeared on the government's secret "no-fly" list.

This database is supposed to be one of the many weapons in the country's fight against terrorism. And although the list hasn't led to any arrests, it has caused approximately 350 U.S. citizens to either be delayed or denied the right to travel. The FBI won't reveal who is on the list, which is maintained by the Transportation Security Administration, a branch of the U.S. Department of Homeland Security, which is run by Tom Ridge.

PIMM FOX is a London-based journalist. Contact him at [redacted]

After that first incident, Kennedy, who you'd think is recognizable, was stopped repeatedly, even after his aides called the TSA to clarify the matter.

His name was removed from the list only after he personally phoned Ridge.

The reason Kennedy was on the list in the first place? Apparently, the name "T. Kennedy" has been used by a suspected terrorist as an alias.

Is that all it takes?

Is this the level of sophisticated technology being deployed to fight the war on terror? You might as well digitize the phone book.

Of course, the airline says it's the TSA's problem, and TSA officials say they're just doing their job and that glitches — well, they just happen. And, yes, they're going to get a bigger, better system.

And while the government says the TSA will issue a letter for those who are mistakenly on the list, how will you know you need the letter unless you're stopped at some airport or border crossing?

I have an English friend who possesses a valid U.S. green card and has worked legally in the U.S. for years. A technology professional who regularly travels from London to Seattle, he was stopped by U.S. immigration officials because he had a U.K. address on one of his documents. When he tried to explain that he goes back and forth on business, he was ushered into a small room and grilled by officers, who made it clear that they didn't believe a word of what he was saying.

Finally, after a rather nerve-rattling experience, a supervisor was called to the scene, inspected the documents and let my friend proceed.

Technology is often touted as savior or scoundrel when it comes to big government projects. The government is spending boatloads of borrowed cash to install massive databases designed to link all sorts of lists, from tallies of delinquent student loans or driver's licenses to flight manifests. It's an interesting idea to build a web of interlocking information to trap terrorists. But the execution is a direct contradiction to the openness, freedom and common sense that characterizes civil society.

The moral of this story isn't that technology is the culprit. Using IT to make the government more efficient, more transparent and more accessible to more people is a liberating and powerful concept. Every day, individuals click through the business of renewing driver's licenses, e-mailing elected officials or checking on government programs, using the sublime magic of the microchip.

But technology that's misused is a problem. The no-fly list is a no-win in the fight against terror. **48972**

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READERS' LETTERS

Critics Fire Back at ITAA Over E-voting

ACCORDING TO the article "ITAA Fires Back at Critics of E-voting" [QuickLink 48210], a recent survey by the Information Technology Association of America showed "that 77% of registered voters are unconcerned about the security of e-voting systems," and ITAA President Harris Miller believes that "critics who claim to be concerned about the security of e-voting systems are really using the issue to push a political agenda on behalf of the open-source community."

I'm pretty sure those same 77% of registered voters aren't concerned about the security of their home PCs, given the widespread problem of worms, viruses and spyware.

If asking proponents of open-source software to comment on the security of electronic voting systems is, as Miller says, "like asking a bunch of clergymen what they think of premarital sex," then asking end users about computer security is like asking a bunch of prostitutes what they think of family values.

Joe Sestirich
LAN administrator, Pittsburgh

I WORK IN THE IT section of a bank, and if we were to go about our normal operations without any hard-copy audit trails, the federal government would shut us down in a heartbeat. How is it that something as important as selecting the man who will run and represent our country doesn't warrant the same scrutiny as processing our money?

Frank Thomas
Pittsburgh, fthomas@comcast.net

THE ITAA'S views and statistics are a smokescreen. This e-voting issue has nothing to do with open-source vs. proprietary, and all to do with reliability, security and auditability. I belong to an e-voting watchdog group in North Carolina, and I would say 90% of the members have no idea what open-source is. They just want a verifiable election.

Jim Franz
Programmer, Greensboro, N.C.

THE ITAA'S statement is ridiculous! Did the survey respondents know what "security of e-voting systems" means? This is a world where 95% of the people cannot program their VCRs. My guess is that most voters would think a policeman at the polling place constitutes good security for the e-voting systems. Read *Computerworld*'s Shark Tank to get a better understanding of the level of computer knowledge out there.

S. Duffy
Senior system analyst, Minneapolis

IF E-VOTING is as flawed as the logic in Harris Miller's justification, then we need to bury the idea immediately. The percentage of people uninformed about an issue does nothing to condemn or defend it.

Chuck Hinkle
Houston

MANY PEOPLE I have known in my 27 years in the industry have no clue about what a secure computer system involves. I've even had a conversation with someone who writes software for the Internet as a profession who believes that simply restricting traffic to Port 80 will keep your server safe.

If 77% of registered voters began to keep up with the security patches on their PCs, stopped opening e-mails and executing attachments from unknown sources, then *maybe* I would begin to trust their opinion on a secure computer system. Until then, the issue is not open-source vs. propriety software; it's about the ability to audit the system. Until major strides are made in computer security, including getting rid of unethical people from the computer profession, a paper trail will be a requirement to guarantee the accuracy of a voting system.

Michael Quigley
Systems analyst/programming coordinator, New Knoxville, Ohio

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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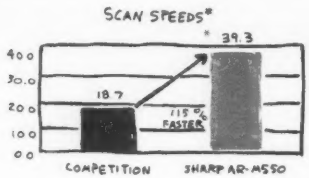

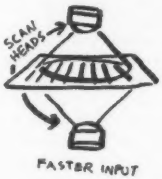

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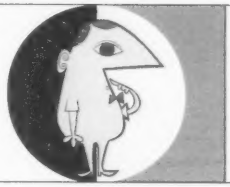
Directory Assistance
Virtual directories provide applications with a single point of access to user data when the information requested is located in more than one directory. **Page 24**

QUICKSTUDY
Fuzzy Logic
While Boolean logic solves problems with a binary, yes-or-no answer, fuzzy logic solves problems when data is vague or imprecise. **Page 26**



SECURITY MANAGER'S JOURNAL
Company Secrets Hit the Exits
Mathias Thurman discovers that a lax policy has allowed executives who are leaving his company to depart with laptops loaded with sensitive e-mail, applications and data. **Page 27**

ORGANIZED CRIME INVADES CYBERSPACE

Once the work of vandals, viruses and other malware are now being launched by criminals looking for profits. BY DAN VERTON

ANTIVIRUS RESEARCHERS have uncovered a startling increase in organized virus- and worm-writing activity that they say is powering an underground economy specializing in identity theft and spam.

"The July outbreak of MyDoom.O was yet another reminder that spammers are now using sophisticated, blended threats that mix spam, viruses and denial-of-service attacks," according to Andrew Lochart, director of product marketing at Postini Inc., an e-mail security services provider in Redwood City, Calif. In July alone, Postini's customers reported more than 16 million directory harvest attacks, which are attempts by spammers to hijack a company's entire e-mail directory.

The link between viruses, worms and the underground criminal economy, however, goes back to long before the latest version of MyDoom, says Mikko Hypponen, antivirus research director at F-Secure Corp. in Helsinki, Finland. Starting with the initial outbreak of MyDoom in January, Hypponen began to notice that what had previously been considered little more than a rogue virus-writing subculture actually had a significant link to organized efforts to use malicious code to make money.

"MyDoom got press coverage because of the denial-of-service attack it launched against SCO and Microsoft Corp.," says Hypponen. "But nobody was paying attention to what was happening behind the scenes."

And what was happening, according to Hypponen, was the beginning of a concerted, unabashed effort to turn virus and worm infections into cash.

Eight days after MyDoom.A hit the Internet, somebody scanned millions of IP addresses looking for the back

Continued on page 22

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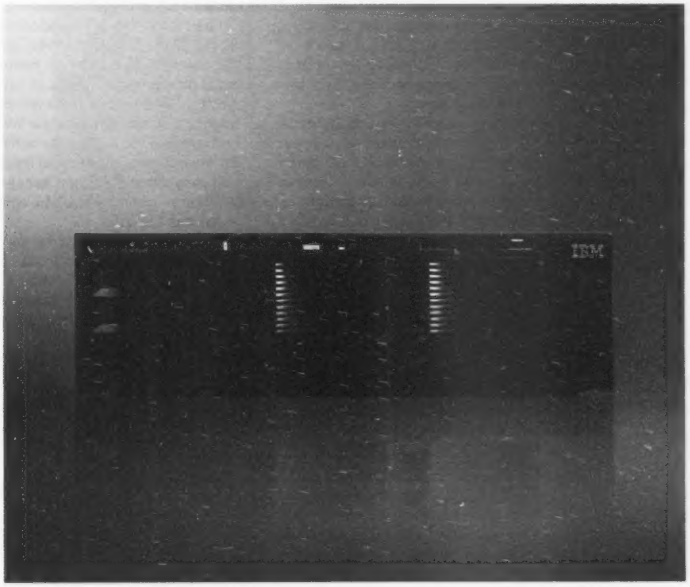

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Continued from page 19

door left by the worm, said Hypponen. The attackers searched for systems with a Trojan horse called Mitglieder installed and then used those systems as their spam engines. As a result, millions of computers across the Internet were now for sale to the underground spam community.

Of course, spamming viruses aren't new. Security professionals have been dealing with them for years. However, the appearance of MyDoom and more recent viruses and worms signaled the beginning of much larger problems, says Hypponen.

By the end of January, Internet users were busy dealing with the Bagle mass mailer. And although the first version wasn't particularly successful, at least a dozen variants soon followed, including variants that carried Mitglieder.

But the real clues that organized gangs were using Bagle and MyDoom to sell spam proxies — as well as links to phony Web sites that exist only to harvest identities and personal financial information — came when the writer behind Netsky.R posed a direct challenge to the so-called professional virus writers.

In addition to attempting to remove Bagle and MyDoom from infected computers, Netsky conducted a denial-of-service attack against Web sites known to be fronts for identity thieves, according to Hypponen.

When F-Secure analysts decoded the encrypted messages hidden within a subsequent version of Bagle (Bagle.J), they discovered a threat of a virus war if the Netsky author continued to "ruin" the "business" of the professional virus writers.

"We have information that the writers of both MyDoom and Bagle may be Russian immigrants living in various European countries," says Hypponen.

Whoever is behind it, they are organized and running a thriving business, says Hypponen.

Brian Dunphy, director of global analysis operations at Symantec Corp.'s Security Operations Center in Alexandria, Va., acknowledges that it's difficult to discern the intent behind many viruses and worms in the wild. In addition to planting back doors, some worms, such as the latest MyDoom variant, have embedded peer-to-peer updating capabilities, he says.

"What we used to see are worms and viruses that did not have a reach-back-and-call-home capability," says Dunphy. "What we saw with MyDoom, however, was that infected systems were aware of other infected systems, and they automatically built a peer-to-peer network of sorts."

Organized virus writers use viruses and worms to create spam that leads unsuspecting users to fake online banks or Web sites, such as this one, that exist only to steal identities.

In fact, Symantec's analysis of the recent MyDoom.M outbreak discovered a mechanism that's used to maintain a list of all known infected systems and permits the worm's author to update all MyDoom.M-infected systems with new arbitrary malicious code with little risk of its network being hijacked by rival worm authors, says Alfred Huger, senior director of Symantec Security Response.

In addition to propagating spam proxies and setting up peer-to-peer networks, viruses and worms are being used to install Web servers on vulnerable systems. Those Web servers are then used to host everything from pornography and pirated software sites to fake banks, Hugos says.

Underground bartering and selling is conducted on Web sites such as a Russian site that, among other things, sells subscription services to compromised computers.

Various other Russian and Chinese message boards exist for the sole purpose of selling spam hosts. Accepted payment methods, shown clearly on the Web pages, include E-gold transactions and WebMoney and Western Union money transfers. Ironically, organized e-criminals don't accept credit cards.

SIGNS OF THE UNDERGROUND ECONOMY

- A massive underground community is engaging in online theft.
- Windows machines are infected with viruses, then turned into proxies, Web servers or attack networks.
- Lists of such servers are being sold and bought online.
- Credit card databases are being sold and bought.
- EBay, PayPal and E-gold accounts are being sold and bought.
- Hacked servers are being sold and bought.
- Distributed denial-of-service attack networks are being sold and bought.

For Sale: Your ID

Viruses and worms carrying Trojan horse code are also powering massive identity theft rings.

At sites like *www.oemcd.biz*, *www.mega-oem.biz*, *http://huge-sales.info* and *www.atlantictrustbank.com*, among hundreds of others, users are presented with the opportunity to buy popular software at tremendous discounts, sometimes at one-tenth the retail price. And while these sites look authentic, Hypponen offers a word of caution.

"The one thing all of these sites have in common is that none of them exist," he says. "If you buy something from them, you'll get nothing, and they will never charge your credit card. But what they will do is steal your identity." In fact, identities and bulk credit card "dumps" are available to the highest bidder at some sites.

Tracking down virus writers and other online criminals can be more difficult than anybody ever imagined. It's particularly difficult in the case of fraudulent domain-hosting schemes, which often use IP addresses that expire every two minutes, Hypponen says.

"If you refresh these sites, the domain name points to a different IP address every two minutes," he explains. "And then if you look at the IP addresses, you'll see that they are in places like Japan, Portugal, Brazil, Canada and elsewhere."

Hackers and malicious-code writers are increasingly automating the Internet shell game that keeps many of them one step ahead of law enforcement. The Kuwaiti hacker group Q8See is a case in point.

On March 8, a Russian source reported to F-Secure analysts the existence of a Trojan horse created by Q8See called Slacke. But what made Slacke unique was the extraordinary lengths to which its authors went to hide their tracks and the mystery that remains about the group's intent.

First, the worm downloaded code from a Web site hosted in São Tomé and Príncipe, a small island nation located off the Atlantic coast of Africa. Analysis by F-Secure, however, showed that the domain rights for the Web site had been sold to a company in Sweden. But registration information listed the company name as JordanChat and the location as Irbid, Jordan. The contact name was TeR0r.

As thousands of infected computers downloaded the malicious code from the Web server in São Tomé and Príncipe, they were then linked to an Internet Relay Chat system operated by CNN in Atlanta.

Once logged into CNN's IRC server, the systems connected to an IRC channel in Mexico called Noticias. And when Hypponen and his analysts studied the channel, they were astonished at what they saw.

"There were 20,000 clients just sitting on the channel doing nothing. They looked like people, but they were bots," he says, referring to programs that perform repetitive, automated functions.

The bots, however, weren't alone. According to Hypponen, three Kuwaiti users, presumably members of Q8See, were sitting on the channel and sending commands to the bots to scan various ranges of IP addresses. And while CNN eventually shut down the chat server, nobody knows for sure what the hackers were doing.

"We may never know," says Hypponen. "Whether or not this is traditional organized crime doesn't matter — because they are organized, and what they are doing is criminal." **48794**

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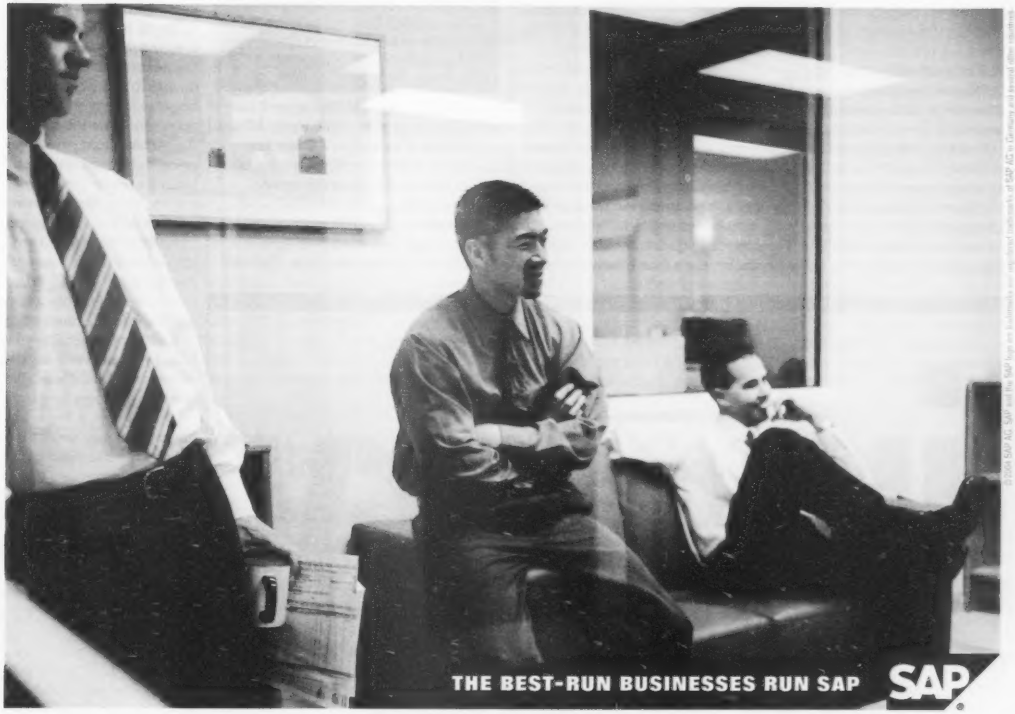

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Directory ASSISTANCE

Virtual directories offer a fast and efficient way to get identity management software and other directory-dependent applications online. **By Robert L. Mitchell**

THE BOEING CO. has a diverse directory infrastructure that includes products like Sun ONE, Microsoft Active Directory and Oracle. Having a heterogenous directory infrastructure in a company the size of Boeing is a practical necessity, but it also creates headaches for the aerospace company, which has 900 directory-enabled applications that serve some 150,000 employees.

The problem is that most identity management systems, Web portals and other directory-dependent applications are designed to access just one directory, but the data each requires may reside in many. Even when requested data is available in a single repository, it may not be structured in the way the application wants to see it.

As a result, getting each application to work with the directory infrastructure can become a big project, says Marty Schleiff, a cyberidentity specialist at the Boeing Shared Services Group.

"Every requirement means changing an existing directory without breaking it for existing clients or setting up a new directory," Schleiff says. A third option, customizing the application, can be costly. Unlike with internal application development projects, the money spent customizing a commercial application can't be leveraged by other applications, and customization adds to the amount of code that must be maintained, he says.

To solve the problem, Schleiff is turning to virtual directory software, an emerging class of products that he says offers a more flexible approach to providing applications with access to user account data and other attributes.

Boeing has piloted and is ready to begin a phased rollout of Virtual Directory Engine from OctetString Inc. in Schaumburg, Ill. To the application, the virtual directory looks just like the target directory it expects to see. It takes requests for data from the application, retrieves it from the back-end directories, performs any transformations needed and presents it to the application in the format required. No modification to the application or target directories is needed.

"We're deploying it to support many client applications. We're trying to create a shared service," Schleiff says.

The Virtual Difference

Virtual directories are similar to another tool: metadirectories. Both can access user data from different repositories. Metadirectories, a core element of user provisioning tools, copy data into a new repository that must be created, maintained and synchronized. The need to keep data updated can be a headache when data in source directories changes frequently. Some business units may also object to the idea of creating a second repository for customer data that will be outside of their control, citing regulatory or strategic concerns.

In contrast, virtual directories access the attributes requested from each directory or database on the fly. The software uses a cache to speed performance but typically doesn't store data locally.

Virtual directory deployments can cost substantially less than alternative strategies. The software, licensed by the server, may cost $10,000 to several hundred thousand dollars for a large project. But that's a small price to pay compared with the cost of rebuilding an enterprise directory or reworking each application, says Schleiff. "Anytime you're considering spending money to customize an application so that it can use your directory, you should look at virtual directory technology," he says.

The technology can even help applications that aren't sophisticated enough to deal with more complex directory mechanisms such as Lightweight Directory Access Protocol (LDAP) referrals. A virtual directory can follow the reference to locate the data and return it to the application.

But virtual directories also have a few drawbacks. Although they don't create an additional repository, they do create another layer of complexity because they require applications to access information indirectly through the virtual directory server rather than going to the directory that actually holds the data.

"There's a discomfort with adding another layer of infrastructure. If something happens to our Web single sign-on, our critical applications are down," says Schleiff. "Virtual directories . . . both simplify and make the service offering more complex."

Another potential weakness: Virtual directories are only as good as the directories behind them. If a directory tends to go down frequently or offers poor response, a metadirectory that has its own data source may be a better choice. But users say virtual directories have advantages here, too. They have load-balancing and fail-over features that can be configured to redirect a request to an alternative data source. If the connection drops in the middle of a request, for example, the virtual directory retries another repository and returns the rest of the data.

Starting Small

Boeing is one of the first companies to make the virtual directory an integral part of its directory service, but programmers and directory specialists at many large companies have been quietly using the tools for several years for specific, one-off applications or departmental development projects.

Jeff Sobel, a senior analyst at New York Independent System Operator (NYISO), a wholesale electricity pro-

When to Use Virtual Directories

- For applications that can access only a single directory when the user data or attributes reside in many places.
- As an alternative to metadirectories when attributes in source directories change frequently.
- As a directory migration tool. A virtual directory lets administrators migrate to a new directory architecture without updating all of the applications that depend on it. The virtual directory presents those applications with a view of the old directory and its schema structures.
- To break apart very large directory repositories to improve write performance and reduce downtime. The virtual directory still provides a single, unified view.

vider in Albany, was building a Web application to let customers place bids over the Internet. He chose RSA Security Inc.'s ClearTrust access management software to authenticate users, but the product could point to only one LDAP directory. His user data resided in an Oracle database and an LDAP directory. At RSA's suggestion, he brought in RadiantOne virtual directory software from Radiant Logic Inc. in Novato, Calif. Sobel says he had the software up and running within a month. "It's not a long cycle time to get it running," he says.

NYISO wasn't always sold on virtual directories, however. The company looked at the tools a year ago and decided that most weren't mature enough. Although a few virtual directory tools have been around since the late '90s, they've improved significantly since then, says Gerry Gebel, a Fairfax, Va.-based analyst at Burton Group. Several vendors have added graphical point-and-click user interfaces to the tools that make setting them up much easier than the previous, text-based interfaces and configuration files. "But you still have to understand LDAP, database structures and things of that nature," Gebel cautions.

The manager of directory services at a large family entertainment company, which he asked not be named, says a virtual directory made sense for his application for both political and technical reasons. The company uses a flat directory structure, but its identity management software expects user data to be organized hierarchically. Using a metadirectory to transform the data was out because management "really put the hammer down about replicating data to different business units," he says. Rebuilding the source directory would have required eight months, versus just one month to deploy a virtual directory. The technology provided a hierarchical view of the data "without provisioning our data all over again," he says.

Choosing a virtual directory means looking at very small vendors, since the big directory players have yet to offer full-blown virtual directory products. The virtual directory vendors — about a half-dozen in all — are typically small, privately held firms with fewer than 30 employees and anywhere from five to 50 or more customers. Yet the vendors count many of the world's largest companies among their customers. "The larger and more complex the organization, the more need they have for this technology," says Gebel.

One way to mitigate the risk of going with small vendors is to leverage agreements they have with identity management software vendors and integrators. Radiant Logic has agreements with RSA and Accenture Ltd., for example, while OctetString has allied itself with Oblix Inc. Users can take other steps as well, says Gebel. "If you're implementing something that is higher risk, you need to take measures such as getting source code in escrow or going through a larger vendor," he says.

Another potential concern is scalability, says Gebel, although vendors disagree. While the products have been shipping for several years, they're evolving and have yet to prove themselves in many large-scale deployments, he says.

But those concerns don't bother NYISO's Sobel. He says he plans to use the technology as part of a broader, single-sign-on project involving more than a half-dozen directories. "Because we aren't tied down to a true directory . . . it's easier to add repositories as time moves on." **48758**

Virtual Players

VENDORS OF VIRTUAL DIRECTORY SOFTWARE are generally small companies with 30 employees or less and a customer base measured in tens of users. Some vendors offer only a virtual directory, while others offer a mix of products and services. Here's how they differentiate themselves.

Radiant Logic and Trondheim, Norway-based **MaXware Inc.** offer both metadirectory and virtual directory products and promote integration features between the two. The MVD MaXware Virtual Directory offers a flexible and easy-to-use interface, says Burton Group's Gerry Gebel. RadiantOne adds a "persistent cache," blurring the distinction between its metadirectory and virtual directory products. Both BEA Systems Inc. and BMC Software Inc. include Radiant Logic's technology in their product lines, while MaXware has partnered with Hampshire, England-based integrator BT Syntegra.

OctetString started with a Java LDAP directory that it transformed into its Virtual Directory Engine. The product has flexible joining, mapping and transformation features and a newly released 3.0 version adds features that make the product easier to use. Oblix resells the technology with its CoreID product.

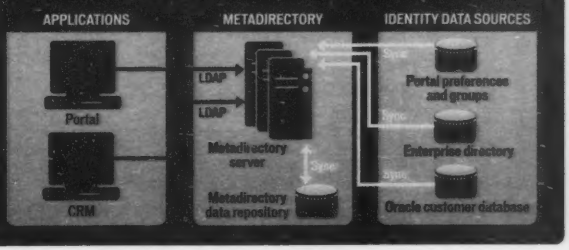
Symlabs SA in Lisbon, Portugal, is the smallest vendor in the group; it focuses on high-performance, large-scale deployments. Telecommunications companies are among the early adopters of its Directory Extender product. Paris-based **Calendra**'s Directory Manager includes a complete development environment and workflow component. The vendor has experience in developing Yellow Pages-type applications, says Gebel.

Persistent Systems Pvt., an established software development outsourcer in Pune, India, is by far the largest vendor in the group. It has experience building metadirectory connectors for other vendors. It has about 1,000 employees, although only about 30 support enQuire Virtual Directory. That product, part of the enQuire Identity Server, also supports a persistent cache.

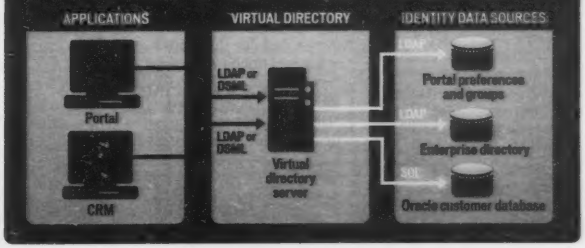
– Robert L. Mitchell

Metadirectory vs Virtual Directory

METADIRECTORIES include software that synchronizes data from multiple source directories, stores it in a new repository and keeps it synchronized. The applications in the example below then request authentication data in the metadirectory using LDAP.



VIRTUAL DIRECTORIES don't maintain a separate information repository but create a virtualization layer between the applications and source repositories. The virtual directory server receives requests from the clients by way of LDAP, Directory Services Markup Language (DSML), SQL or Simple Object Access Protocol. It then retrieves the requested data and performs transformations on the fly in order to present the data requested to each application in the format it expects.



Fuzzy Logic

DEFINITION

Fuzzy logic is an extension of classic Boolean logic designed to work with imprecise or vague data, with the concept of partial truth. Where classical reasoning requires *yes* and *no* values, fuzzy logic can handle concepts such as "maybe," "nearly" and "very."

BY RUSSELL KAY

THE DIGITAL computing world is built on a structure of Boolean logic applied to binary values — one or zero, yes or no, in or out. But this powerful structure is a gross oversimplification of the real world, where many shades of gray exist between black and white. In everyday life, we use quasi-metric notions that are clearly related to numerical concepts or values but lack precision or demarcation.

What time is it? If I'm a server time-stamping thousands of files, digital certificates or transactions, I need very fine distinctions. But if I'm asking a co-worker what time it is, do I really care that it's 11:49:54 a.m. Eastern Daylight Time? Or do I just want to know if it's time for lunch yet?

QUICK STUDY

Or take the weather. If it's 90 degrees Fahrenheit on a July day, that's hot for Massachusetts but mild for Arizona. A total of several inches of rain that month might constitute a drought in Massachusetts but a welcome relief from one in Arizona.

Get Fuzzy

The real world simply doesn't map well to binary distinctions, and numerical precision is often unhelpful in making qualitative statements. Fuzzy logic gives us a way to deal with such situations.

In fuzzy systems, values are indicated by a number (called a truth value) in the range from 0 to 1, where 0.0 represents absolute falseness and 1.0 represents absolute truth. While this range evokes the idea of probability, fuzzy logic and fuzzy sets operate quite differently from probability.

If I tell you that my height is 5 ft. 6 in. (or 168 cm), you may have to think a bit before deciding whether you consider me short or not short (i.e., tall). Moreover, you might reckon me short for a man but tall for a woman. So let's make the statement "Russell is short," and give that a truth value of 0.70.

If 0.70 represented a probability value, we would read it as "There is a 70% chance that Russell is short," meaning that we still believe that Russell is either short or not short, and we have a 70% chance of knowing which group he belongs to. But fuzzy terminology really translates to "Russell's degree of membership in the set of short people is 0.70," by which we mean that if we take all the (fuzzy set of) short people and line them up, Russell is positioned 70% of the way to the shortest. In conversation, we would say Russell is "kind of" short and recognize that there is no definite demarcation between short and tall. We can state this mathematically as mSHORT(Russell) = 0.70, where *m* is the membership function.

Another difference becomes visible when we look at some logical operations, particularly *or* and *and*. In probability, we calculate the *and* (intersection) of two independent events by multiplying their individual probabilities together and the *or* (or union) as the sum of individual probabilities less their product. For fuzzy logic, we evaluate *or* as the maximum of individual truth values, while *and* is the minimum of those values. As we incorporate more factors into the mix, even those with high values — the overall probability continues to drop, eventually approaching 0.0. For fuzzy logic, however, the truth value remains high. Similarly for the *or* operator, incorporating more factors increases probability to near 1.0, while adding more fuzzy sets doesn't raise the combined value at all, and the limit will be the largest of the individual membership values.

Hedging Your Bets

One thing that makes fuzzy systems useful is the ability to define "hedges," or descriptive modifiers, to represent fuzzy values. This keeps the operations of fuzzy logic closer to natural language and allows us to generate fuzzy statements through mathematical calculations.

Defining hedges and the operations that use them is a subjective process, and it can vary from project to project. But the system lets us use operators and produce compound results using the same formal methods as classic logic.

For example, let's change the statement "Bob is old" to "Bob is very old." Here we're using "very" as a hedge or descriptor, and this particular hedge is often defined as equivalent to the square of the base value. Therefore if mOLD(Bob) = 0.80, then mVERYOLD(Bob) = 0.64.

Other hedges include "more or less," "somewhat," "rather" and "sort of." All have subjective definitions but transform membership/truth values in a systematic, reliable manner. **48634**

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

IT STARTED WITH PLATO

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SEVEN TRUTHS OF FUZZY LOGIC

1. Fuzzy logic isn't fuzzy. Fuzzy logic isn't intrinsically imprecise, doesn't violate common sense and produces unambiguous results. "Classical" Boolean logic, in fact, is merely a special case of fuzzy logic.

2. Fuzzy logic is different from probability. With probability, we're trying to determine something about the potential outcome of clearly defined events that may occur at random. With fuzzy logic, we're trying to determine something about the nature of the event itself. Fuzziness is often expressed as ambiguity, not imprecision or uncertainty; it's a characteristic of perception as well as concept.

3. Designing fuzzy sets is easy. Fuzzy sets reflect, in a general way, how people actually think about a problem. It's usually quick and easy to rough out the approximate shape of a fuzzy set. Later on, after some testing or experience, we can adjust its precise characteristics.

4. Fuzzy systems are stable and easily tuned and can be validated. It's faster and easier to create fuzzy sets and build a fuzzy system than it is to create conventional knowledge-based systems, since fuzzy logic handles all the interlocking degrees of freedom. These systems are validated much like conventional systems, but tuning them is usually much simpler.

5. Fuzzy systems aren't neural networks. A fuzzy system attempts to find the intersection, union or complement of the fuzzy control variables. While this is somewhat analogous to both neural networks and linear programming, fuzzy systems approach these problems differently.

6. Fuzzy logic is more than process control. Although some people view fuzzy logic mainly as a tool for process control and signal analysis, that interpretation is too limiting. Fuzzy logic is a way of representing and analyzing information, independent of specific applications.

7. Fuzzy logic is a representational and reasoning process. Fuzzy logic is a powerful and versatile tool for representing imprecise, ambiguous and vague information. It can't solve all problems, but it helps us model difficult, even intractable problems.

– Adapted from "The Seven Noble Truths of Fuzzy Logic," by Earl Cox, Computer Design, *April 1992*

MELINDA BECK

Company Secrets Hit the Exits

It does no good to worry about hacker attacks if departing executives are free to leave with sensitive programs and data. By Mathias Thurman

THE OTHER DAY, I found out that an executive in my company was leaving. Normally, that wouldn't be a big deal. After all, in a large company people come and go all the time. But this executive's employment contract included a clause that lets him keep his laptop. As a security manager, I find this alarming, but it's a common practice when hiring executives here.

SECURITY MANAGER'S JOURNAL

While executives have always departed with their computers, until now no one has bothered to erase the sensitive programs and data on those machines. Computers in the sales and marketing group, for example, contain customer contact lists, confidential price lists, e-mail correspondence, and merger and acquisition information.

The executive in question was part of an inquiry a few months ago that required obtaining an image of his laptop's hard disk drive. A member of the legal department, hearing of his planned departure, remembered that inquiry and called me. This person was leaving the company under good terms, he said.

Nonetheless, I asked for his laptop right away so that we could take another mirror image, wipe the drive and then install the standard baseline image on it. To my surprise and dismay, my request was met by a considerable amount of resistance from management. But in the end, less than 24 hours before the employee's departure, I finally received his laptop.

In the wake of this episode, the CIO established a policy that any laptop leaving with an employee must have its disk wiped. The policy statement will be included in future offer letters whenever retention of any company-issued computer equipment is part of the employment agreement.

With that problem behind me, I turned my attention to another pressing issue. Except for certain enterprise-class applications, such as PeopleSoft, Oracle and Siebel, my company develops in-house almost all of the software it uses. Prior to deployment, any application we develop must enter our project life cycle, which includes many reviews. Most of the items I am concerned with relate to access control, encryption, server and application security, and proper network segregation.

Unfortunately, this process is fairly new and is always being refined. We've only recently mandated IT security representation at the various stages of projects. Now, someone in my group attends the project planning meetings and all technical and critical design review boards. But sometimes smaller programming projects can slip by.

> **While executives have always departed with their computers, until now no one has bothered to erase the sensitive programs and data on those machines.**

A few months ago, I encountered an application that lets a user create and publish surveys. Since the program was designed for a group that was using the application for the one-time collection of nonsensitive data from the sales organization, we decided not to run it through the project life-cycle process. But I remember mentioning at the time that I was afraid other departments would find out about the survey tool and try to use it for gathering more-sensitive information.

Fears Realized

Since then, just as I feared, several departments have expressed an interest in this application. After getting wind of this, I insisted that if the application was to be used in a production environment for collecting more-sensitive data, it had to go through the formal project life-cycle path.

As part of the security review, we conduct a variety of security assessments. We assess both the application and the server on which it will reside. In addition, we review the application's architecture, which typically involves understanding which ports the application must use and any relationships between the application and other production servers. We don't want one compromised system to lead to the compromise of others by way of trust relationships. We also ensure that the appropriate firewall rules are defined and that only the necessary services are allowed.

The survey tool consists of a stand-alone application that creates a survey. The survey is then pushed to a Web server via an encrypted session. To enable that, firewall rules must allow only the server containing the stand-alone application to communicate with the Web server. We also needed rules to allow only Web traffic to the Web server and to our network operations center to monitor the server.

To conduct the server and application assessment, we used the open-source Nessus scanning program and Web Inspect from Atlanta-based SPI Dynamics Inc. In addition, we used scripts and other techniques as time permitted to further interrogate the server and the application. Any discrepancies in either must be fixed, or mitigating controls must be put in place.

For the survey-tool application, the server assessment came out perfect. That's because we have a top-notch baseline system image that has been hardened and patched. But the application assessment revealed a few items of concern, including a cross-site scripting vulnerability that could be exploited to cause the user to execute malicious code when viewing the survey. Once these vulnerabilities are fixed or mitigated, we plan to give the green light to the project leader to deploy this application.

Next, I'm back to trying to find an automated way to detect rogue wireless access points. We're testing Cisco Systems Inc.'s triangulation feature. If configured properly, it can detect an AP within a 10-foot radius.

The problem is that the APs are often hidden, and we still have to find them. So we're working on a way to automatically trace media access control addresses from our switches back to network jacks in individual offices. It's still not an ideal approach, but it's definitely a start.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum: **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

■ ***Network Security First-Step***, by Thomas M. Thomas; Pearson Education, 2004.

I frequently receive e-mail from readers asking me about the best way to get into the information security field. I always suggest a few titles, and *Network Security First-Step* is the perfect book for that purpose.

The author assumes that readers know nothing about security and introduces almost every pertinent topic. From security policies to encryption to penetration testing, Thomas presents the topics in a way that's easy to understand. He combines screen shots, diagrams and examples of things such as router and firewall access control lists to make his points. Overall, it's a good introduction for those who know little about the field.

– *Mathias Thurman*

SOX Compliance Suite Launched

SAP consulting firm Precision Consulting Inc. in Minden, Nev., announced the release of SOX+, a set of tools designed to assist with Sarbanes-Oxley Act compliance efforts on SAP systems. The software is available now. Pricing starts at $40,000.

McAfee WebShield 3.0 Makes Debut

McAfee Inc. in Santa Clara, Calif., has released Version 3.0 of McAfee WebShield for its e250, e500 and e1000 appliances. WebShield includes antivirus, content-scanning and optional antispam functions. New features include the ability to create and apply rules for antivirus, antispam and content filtering for different groups, a dashboard and configuration wizard, and an SMTP transport-logging function. Pricing starts at $1,480 for a 100-node license.

BRIEFS

Workshare Ships Protect Version 3.0

Workshare Technology Inc. in San Francisco announced Workshare Protect 3.0, software that's designed to detect and eliminate unwanted metadata from Microsoft Office documents before they're e-mailed. The tool also integrates with Lotus Notes and Novell GroupWise software. Available now, Workshare Protect 3.0 starts at $25 per seat.

Asset Management Tools Improved

LogicLibrary Inc. last week released a new version of its Logidex software development asset management tools for J2EE and .Net. Version 3.5 is compliant with the Web Services Interoperability Organization's Basic Profile, according to the Pittsburgh-based company. Logidex 3.5 starts at $10,000 per server and $1,000 per seat.

Iomega Adds 35GB SCSI Disk Backup

Iomega Corp. has introduced the REV 35GB, an entry-level external SCSI disk drive designed to replace tape drives without disrupting server operations. The external drive sells for $499; an internal model costs $449.

Imprivata Updates Password Manager

Imprivata Inc., a vendor of password management and biometric authentication products in Lexington, Mass., shipped OneSign 2.5. The appliance features self-service password management functions and enhanced fingerbiometric capabilities that eliminate the need for users to enter or select a username prior to scanning, said Imprivata.

BRUCE SCHNEIER

Encryption Must Move Beyond SHA

AT THE Crypto 2004 conference in Santa Barbara, Calif., this month, researchers announced several weaknesses in common hash functions. These results, while mathematically significant, aren't cause for alarm. But even so, it's probably time for the cryptography community to get together and create a new hash standard.

One-way hash functions are a cryptographic construct used in many applications. They are used with public-key algorithms for both encryption and digital signatures. They are used in integrity checking. They are used in authentication. They have all sorts of applications in a great many different protocols. Much more than encryption algorithms, one-way hash functions are the workhorses of modern cryptography.

BRUCE SCHNEIER is the chief technology officer at Counterpane Internet Security Inc. in Mountain View, Calif. You can subscribe to his monthly "Crypto-Gram" newsletter at www.schneier.com/crypto-gram.html.

Ron Rivest invented the MD4 and MD5 hash functions in the early 1990s. Then the National Security Agency published a similar hash function called the Secure Hash Algorithm (SHA), followed by SHA-1, which today is the most popular hash function.

One-way hash functions are supposed to have two properties. First, they're one-way. This means that it's easy to take a message and compute the hash value, but it's impossible to take a hash value, and re-create the original message. (By "impossible" I mean "can't be done in any reasonable amount of time.") Second, they're collision-free. This means that it's impossible to find two messages that hash to the same hash value. The cryptographic reasoning behind these two properties is subtle, and I invite curious readers to learn more in my book, *Applied Cryptography* (Wiley, 1995).

Breaking a hash function means showing that either — or both — of those properties aren't true. Cryptanalysis of the MD4 family of hash functions has proceeded in fits and starts over the past decade or so, with results against simplified versions of the algorithms and partial results against the whole algorithms.

This year, Eli Biham and Rafi Chen, and separately Antoine Joux, announced some impressive cryptographic results against MD5 and SHA. Collisions have been demonstrated in SHA. And there are rumors, unconfirmed at this writing, of results against SHA-1.

The magnitude of these results depends on who you are. If you're a cryptographer, this is a huge deal. While not revolutionary, these results are substantial advances in the field. The techniques described by the researchers are likely to have other applications, and we'll be better able to design secure systems as a result. This is how the science of cryptography advances: We learn how to design new algorithms by breaking other algorithms. In addition, algorithms from the NSA are considered a sort of alien technology: They come from a superior race with no explanations. Any successful cryptanalysis against an NSA algorithm is an interesting data point in the eternal question of how good they really are in there.

As a user of cryptographic systems — as I assume most of you are — this news is important, but not particularly worrisome. MD5 and SHA aren't suddenly insecure. No one is going to be breaking digital signatures or reading encrypted messages anytime soon with these techniques. The electronic world is no less secure after these announcements than it was before.

But there's an old saying inside the NSA: "Attacks always get better; they never get worse." These techniques will continue to improve, and probably someday there will be practical attacks based on these techniques.

It's time for us all to migrate away from SHA-1.

Luckily, there are alternatives. The National Institute of Standards and Technology (NIST) already has standards for longer —and harder-to-break — hash functions: SHA-224, SHA-256, SHA-384 and SHA-512. They're already government standards and can already be used. This is a good stopgap, but I'd like to see more.

I'd like to see NIST orchestrate a worldwide competition for a new hash function, like it did for the new encryption algorithm, Advanced Encryption Standard, which replaced the Data Encryption Standard. NIST should issue a call for algorithms and conduct a series of analysis rounds where the community reviews the proposals with the intent of establishing a new standard.

Most of the hash functions we have and all the ones in widespread use are based on the general principles of MD4. Clearly, we've learned a lot about hash functions in the past decade, and we can start applying that knowledge to create something even more secure.

Better to do it now, when there's no reason to panic, than years from now, when there might be. **48921**

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Is Grid Computing Ready for Your Enterprise?

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* Complimentary registration is restricted to qualified IT executives only.

Grid Computing: Assessing the Reality and the Potential

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7:45am to 8:15am	Registration and Networking Breakfast
8:15am to 8:45am	**From Cutting Edge to Corporate Stage: Grid Computing and the Enterprise** Maryfran Johnson, Editor in Chief, Computerworld
8:45am to 9:15am	**Industry Analyst Perspective**
9:15am to 9:45am	**Virtualization at CIGNA Corp.: Balancing Tactical IT Goals with Business Strategy** Ben Flock, VP of Virtualization and Application Frameworks, CIGNA
9:45am to 10:15am	Refreshment and Networking Break
10:15am to 10:45am	**Update from the Enterprise Grid Alliance (EGA)**
10:45am to 11:15am	**The View of Grid Computing from Iron Mountain** Bill Olsen, VP of Engineering, Iron Mountain
11:15am to Noon	**Key Considerations in Grid Computing Projects: An IT Executive Roundtable** Panel Moderator: Patrick Thibodeau, Senior Editor, Computerworld
Noon	Program Concludes

Selected speakers include:

Maryfran Johnson
Editor in Chief, Computerworld

Ben Flock
VP of Virtualization and Application Frameworks, CIGNA

Patrick Thibodeau
Senior Editor, Computerworld

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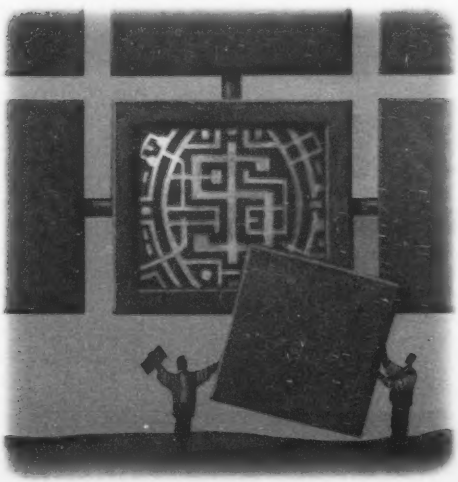

This program will also take place at the State Room (60 State Street) in Boston on September 21, 2004

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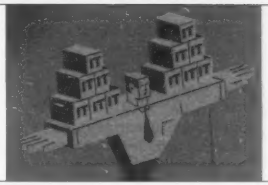
WHO'S WHO IN IT
The Thrill of Crisis
You may think that database administration is a skill, but DBA Gary Rue knows it's an art. In his world, a crisis is always just around the corner. **Page 36**

OPINION
Intelligent Disobedience
Executives with half-baked and hare-brained ideas can doom projects from the start, and scope creep threatens the rest. What's a project manager to do? Gopal K. Kapur has the answer: Just say no. **Page 38**



Petite Portfolio
Big projects get all the attention, but several small projects can add up to big risks. Managing them efficiently requires a careful balance of rigor and common sense. **Page 33**

Who Owns the Web?

When business units fight to control the corporate Web site, the company loses.

By Mary K. Pratt

WORKERS at Excel Switching Corp. spent months studying successful Web sites, mapping out a strategy and implementing their own Internet vision. But the planning couldn't eliminate a common problem: internal debates.

For example, engineers at the Hyannis, Mass., company, which sells hardware to the communications carrier industry, wanted graphics and information to dominate the site, while marketers wanted a more streamlined approach. "There is that push and pull," says Bill Kelly, Excel Switching's director of marketing programs, adding that the company takes a democratic approach in those struggles. "Whoever has the most influential argument, we'll go with it," he says.

Technology experts and business leaders alike say ownership of corporate Web sites is often up for grabs, as departments fight for placement, space and functionality. Marketing uses the Web site for branding, sales uses it to sell, and customer service uses it to minimize inbound phone calls. IT is left to support all the demands — within budget, of course.

But internal bickering comes at a price — lost leads, delayed launches and budget overruns — that can cost the company sales, brand recognition and customer satisfaction.

A 2004 report from Jupiter Research in New York highlights the problem: "Often there is neither an incentive for units to work together to accommodate each other's objectives, nor a governance mechanism to maximize the overall value of the Web site as a corporate asset."

"The Web represents a confluence among different parts of the company," says Jupiter Research senior vice president David Schatsky, who wrote the report. He points to a well-known consumer travel company that also serves businesses. The company's business division wanted to promote its business-oriented products on the Web site, but other divisions thought that would puzzle the company's core clients: individual consumers. "In that situation you need a higher authority who can make a decision," Schatsky advises.

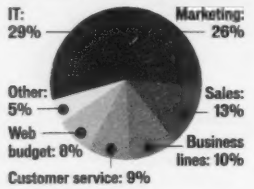
The Cost of Dissension

Jackie DiGiovanni, vice president of marketing and communication for U.S. Pensions Group at Toronto-based Manulife Financial Corp.,

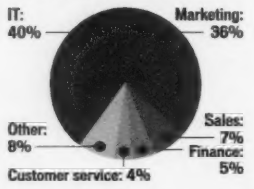
RED NOSE STUDIO

Pieces of Web Pie

Web funding sources, by department



Department to which Web site decision-makers report



Base for both: 254 IT decision-makers
SOURCE: JUPITER RESEARCH, NEW YORK, 2004

knows how costly those debates can be. When her division redesigned its Web site last year, the internal audit department wanted last-minute changes to the security features. Other departments disagreed with the proposal to assign new numbers and access codes to the 1.2 million participants who would use the site, but audit got its way, DiGiovanni says.

The change was a disaster, prompting frustrated plan sponsors and participants to bombard Manulife's customer service department with calls.

"What internal audit wanted ideally was not workable in the real world," DiGiovanni says. Manulife spent $500,000 and six months resolving the problem.

Now she tells team members to bring such disagreements to the attention of the next level of management. "We're more aware of needing to identify the conflicts and take more to the steering committee and let it get hashed out at that level," she says.

Web steering committees are typical at more sophisticated companies, Schatsky says. A financial institution, for example, might have leaders from IT, the mortgage unit, the credit card division and customer service on the committee, with the chairman reporting to a senior executive.

But Rick Swanborg, president of Icex Inc., a research and content management firm in Boston, says simply forming a steering committee isn't enough. "The companies that have done a better job at it have really put together a specialized group with people from IT, marketing [and] maybe some people from human resources who can think through the best way to build the corporate Web site," Swanborg says.

He suggests that a company form an entity that's focused only on the Web site and that holds ultimate responsibility and authority.

Jupiter Research's report recommends appointing "a single executive with responsibility for maximizing the value of the company's Web site overall." That executive's job would be to make sure decisions support the whole company's objectives rather than the goals of an individual department.

Companies also need to define a primary, high-level purpose for their sites. "It's crucial to getting to the next step," which is to maximize the Web site's return on investment, Schatsky explains.

When developing its initial site in 2001, New York-based Verizon Communications Inc. defined it first as a single door to the corporation and second as customer-focused, says Maria Malicka, executive director of e-commerce and call management. "We gained alignment around that, so we didn't experience infighting or major disagreements," she explains.

Verizon also instituted an e-commerce council of vice presidents and directors to address corporate-level questions and develop high-level strategies for the site. And the company has stakeholder forums, so leaders from different departments can hear and weigh in on proposed Web site changes. "Everyone was at the table from the beginning," Malicka says.

These steps haven't eliminated all debates about the Web site, she says. But they're crucial to resolving departmental conflicts so that the outcomes are best for the company.

"We are all in alignment on its goals, and if there are any disagreements, we have forums for discussion and negotiations. And when we focus on goals and customers, we don't have any issues that we can't resolve," she says.

A Clear Strategy

Randy Gravlin, president of Business Innovation Inc., a technology consulting firm with offices in Woburn, Mass., and Montreal, says that without a clear strategy, companies end up with "clusters" such as IT, business and marketing that ultimately have to come together to build a successful Web site. "We've heard it many times: 'This is going to be very hard. How do you bring these groups together to build a consensus?' But it is doable," he says.

Business Innovation worked with St. Louis-based Upbeat Inc. when the company spent nearly $1 million revising its Web site earlier this year.

Carla M. Russo, Upbeat's vice president of material management and MIS, says the site was reworked to integrate it with back-office functions, collect better data and drive more traffic.

The marketing department at Upbeat, which manufactures and markets indoor and outdoor products for business and government properties, controlled the Web site prior to its redesign, Russo says. But marketing also oversaw the production of 5 million catalogs annually, and the Web site had to compete for limited resources. Sometimes that meant Russo and the webmaster were overruled.

Russo remembers one instance where she pushed for photos to correspond with each item available for sale on the site, arguing that customers want to see exactly what they're buying. Marketing said no, citing limited time and resources.

But with the redesign, Upbeat's CEO agreed with Russo and ordered new photos. Russo sees this as one sign of the company's new focus on the Web.

"Prior to this redesign, the Web was there, but I don't know if anyone was really treating it as a channel," she says. There was no clear marketing plan, and there were no specific goals. "Nobody was really driving it," Russo says.

Russo now sees IT and marketing as having more equal standing, which means better decisions for the company overall. Upbeat even plans to add a new position staffed by someone who has both a tech background and marketing know-how to help bridge the two departments that run its site.

"Unlike other channels that can be owned by one department, the Web site is a unique animal. It just plays too interactively into other areas," she says. "It's the one channel where there has to be a clear collaboration." **48696**

Pratt is a freelance writer in Waltham, Mass. Contact her at markmary@mindspring.com.

First Among Equals

Companies often put functionality or time to market first when it comes to their corporate Web sites, but they should put security at the top of the list, says Jonathan G. Gossels, president of SystemExperts Corp., a Sudbury, Mass.-based provider of network security consulting services with nine offices throughout the U.S.

That means the security team must rank as a major stakeholder as sites are built and revised.

"Security should be part of the overall plan. That's early; that's before anything has been written," Gossels says.

Companies should have guiding principles when it comes to IT security, and those principles must apply to Web sites, says Bala Iyer, an assistant professor in the information systems department at Boston University's School of Management.

Without those guiding principles, companies "could drop the ball on security" as they build their Web systems, Iyer says. Still, he believes many companies push security down on their list of priorities.

Gossels recommends that companies empower workers "to blow the whistle when something isn't being built securely. The ownership of securing the firm is shared by everybody in the firm. Everybody's reputation suffers if the cargo goes out without shutting the door."

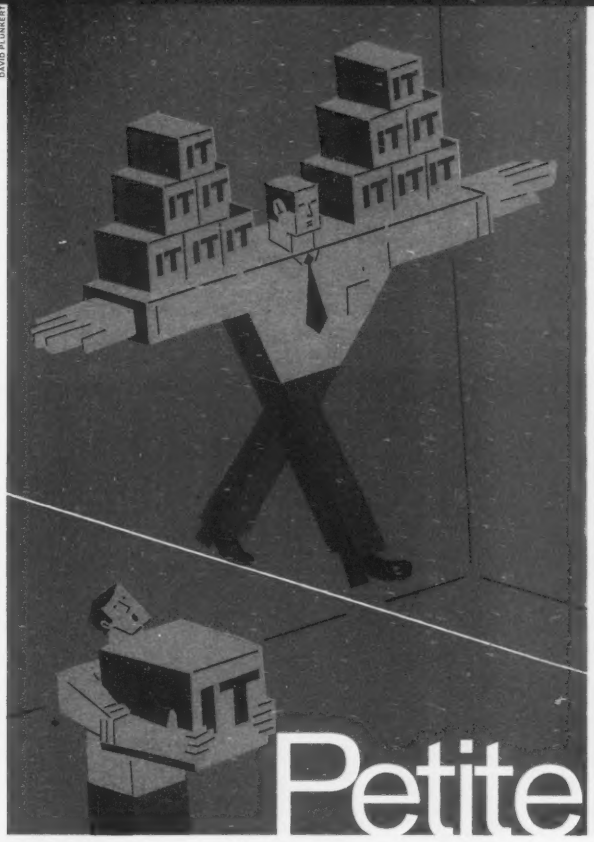
– *Mary K. Pratt*

Reaching Consensus

Web site operations are a never-ending series of upgrades and revisions, a process that invites input from every department under the sun.

Despite the various and sometimes conflicting orders that IT might receive from these stakeholders, experts say consensus is achievable. Here's how:

- **Define a high-level, primary purpose for your corporate Web site.** This will help guide decisions and serve as a reference point for resolving conflicts.
- **Name an entity – an individual, a steering committee or a new department** – responsible for mapping the company's overall strategic objectives onto the Web channel and resolving conflicts.
- **Invest in personnel who understand both marketing and technology,** the two divisions most likely to dominate corporate Web site planning.



DAVID PLUNKERT

Petite Portfolio

Managing small projects requires a careful balance of rigor and flexibility. By Thomas Hoffman

PROJECT MANAGEMENT experts will tell you that IT departments are doing a better job than they used to in delivering big projects on time and within budget. But shift the discussion to smaller projects — those valued at $250,000 or less — and their confidence starts to dwindle.

"There's a gap when it comes to small projects and the due diligence that should be applied to them," says Margo Visitacion, an analyst at Cambridge, Mass.-based Forrester Research Inc.

With small projects, IT project managers often spend less time on critical areas such as testing and quality assurance, says Visitacion. And even if IT departments have fairly mature project management disciplines in place, "they apply the practices, but the rigor goes down," she says.

Other tasks that IT managers tend to downplay on small projects include documenting the business objectives, defining requirements and managing changes, consultants say.

While individual small projects may seem less significant, they add up. This year, for example, the U.S. Food and Drug Administration has 28 projects it defines as "major" on tap that cost at least $5 million per year or $20 million over the life of the project. But the 50 to 60 "nonmajor" projects in the pipeline this year represent $40 million of the agency's $200 million IT project budget, says Rod Bond, director of strategy and planning at the FDA in Rockville, Md.

What to Keep

Project managers understand that they can be more flexible with small projects but critical requirements remain.

At Capital One Financial Corp., effective small-project management starts with defining the criteria for a small project — those valued at $50,000 or less — and establishing a set of requirements that have to be met.

For instance, the manager of a small project at McLean, Va.-based Capital One will place greater emphasis on how changes directly affect end users and focus less on technical change management issues, says Ray Frigo, vice president of corporate technology management at the credit card issuer.

Since it began refining its project delivery approach three years ago, Capital One has scaled back documentation requirements for smaller projects so they don't become too cumbersome to manage, says Frigo. The tailored small-project methodology has helped the company complete projects 10% to 15% faster this year, he says.

The FDA uses IT portfolio management software from Portland, Ore.-based ProSight Inc. to help ensure that small projects go through much of the rigor that bigger projects do. Project managers design a work breakdown schedule and a budget plan for each phase of every project, says Bond.

What to Drop

But other big-project requirements, such as documenting each step, can be waived. "For a $25,000 project, you'd spend more time documenting than you would building," Bond explains.

At Russell/Mellon Analytical Services LLC, managers prioritize and rank projects of all sizes with the help of a project management office (PMO) that was created four years ago, says Tammy Reuter, manager of strategic initiatives at the Tacoma, Wash.-based provider of investment analysis services.

The PMO mandates that project managers develop a business case for each effort, regardless of size. "We want to make sure that the smaller projects we pick are the most critical," says Reuter, whose group uses portfolio management software from Bellevue, Wash.-based Pacific Edge Software Inc.

But certain efforts don't meet the threshold for project rigor. For example, if the company has a $20,000 software enhancement to complete, "we don't do much management of that other than determining which tweaks will be done first," Reuter says.

A business case also has to be made for projects of all sizes at Brown Brothers Harriman & Co., a private bank in New York. The difference is that a smaller project might not require the same amount of detail. "Maybe a two-page business-requirement document instead of a 50-page document," says Rick Berk, the bank's CIO.

The bank's senior management monitors all projects using a combination of weekly and monthly reports developed with portfolio management software from Redwood City, Calif.-based Niku Corp.

Large projects still command more quality assurance staffers than small projects, Berk says. But to ensure that smaller projects are held to a consistent standard, the bank's IT staff has written test scripts for them. That enables the bank to perform faster and more automated regression testing that's "less of a burden for smaller projects," says Berk.

IT shops vary in their approach to small projects, but Forrester's Visitacion says smart project managers agree on one thing: "You can scale down the rigor, but you can't throw away the requirements." **48650**

A Little Advice

- Establish criteria for small projects, including duration and dollar amounts.
- Create a standard small-project methodology.
- Monitor projects, even if it's done via e-mail or spreadsheets.
- Consider setting aside a budget specifically for small projects so that project sponsors don't have to compete with large projects for funding and prioritization.
- Don't take shortcuts. It could cost you down the road.

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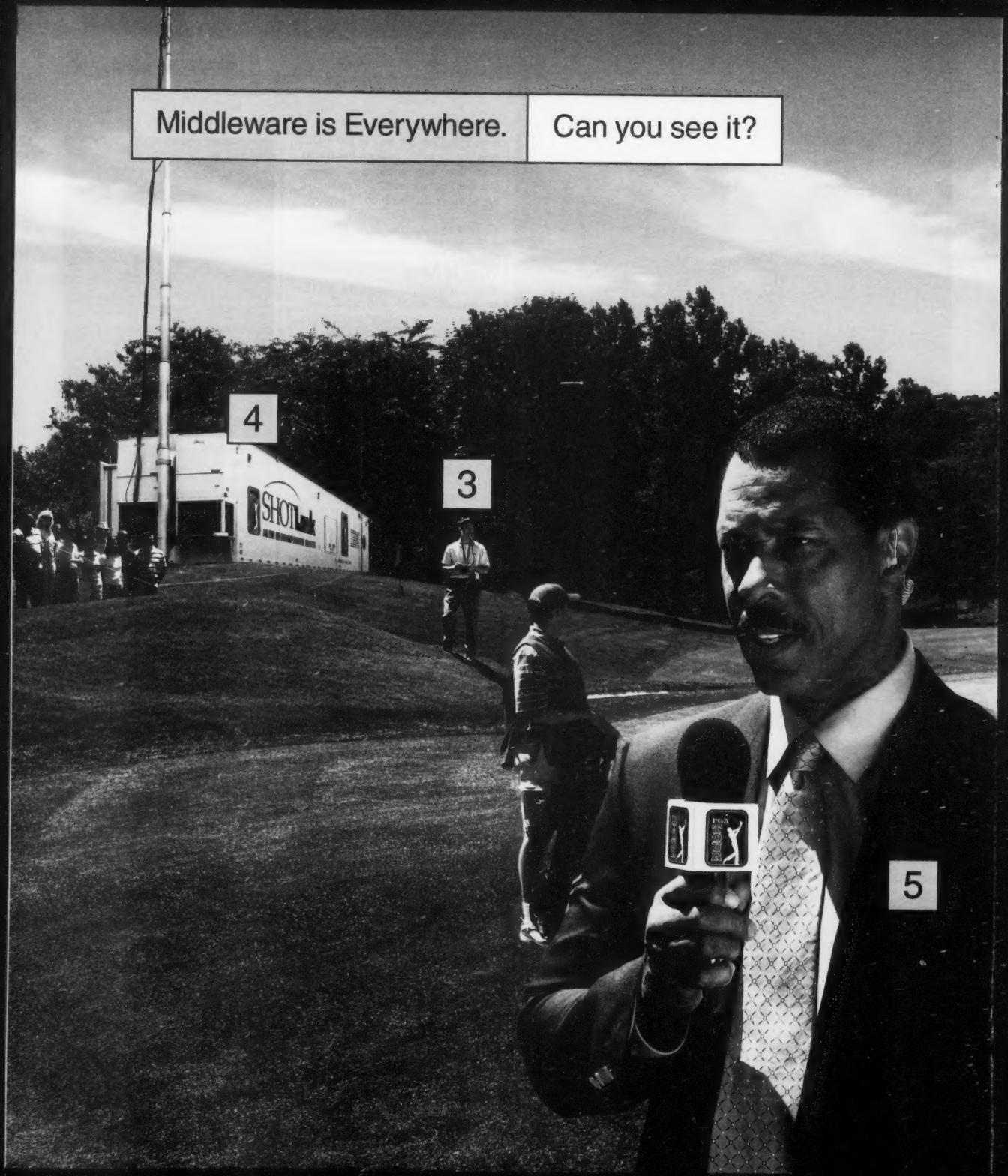
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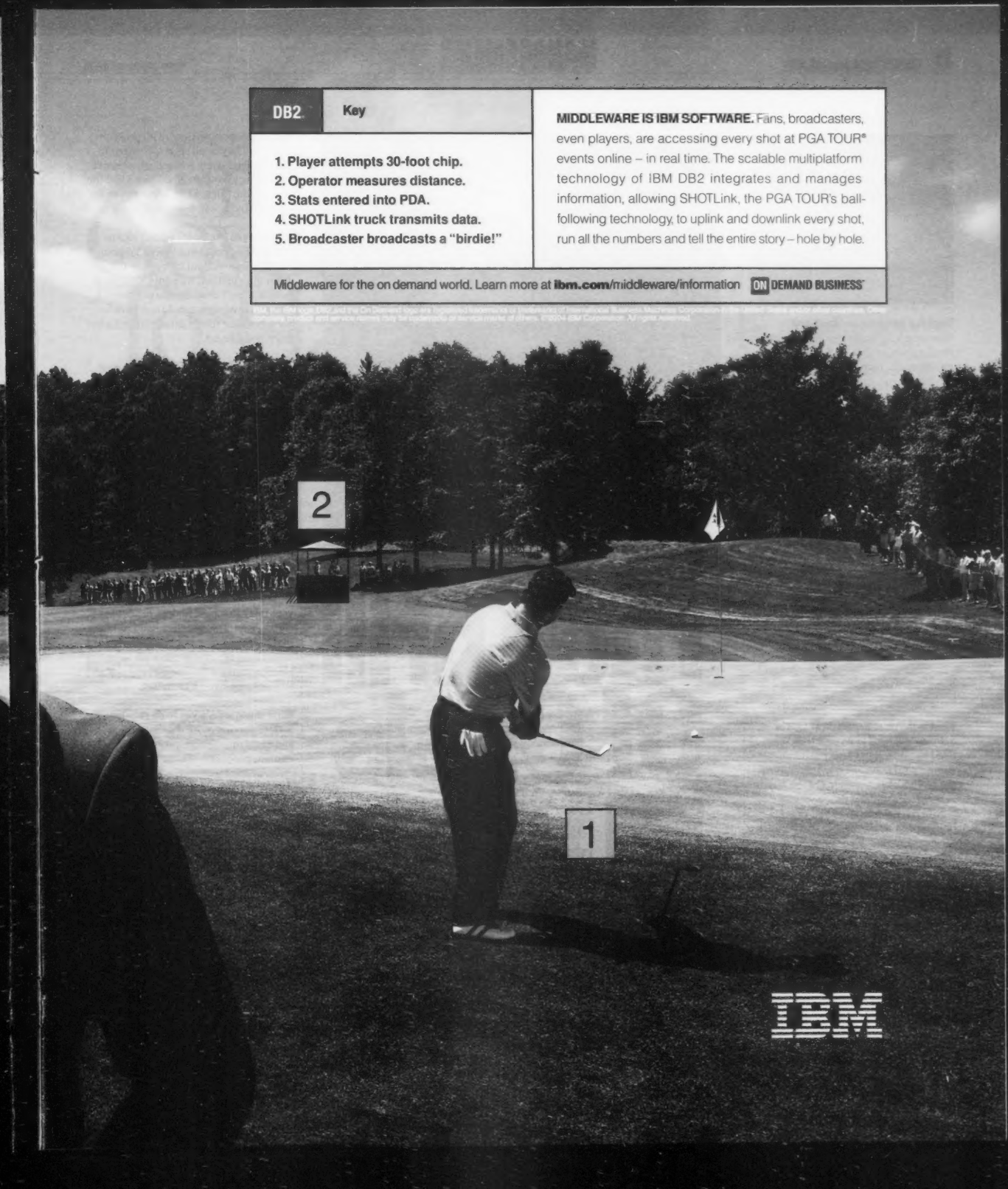
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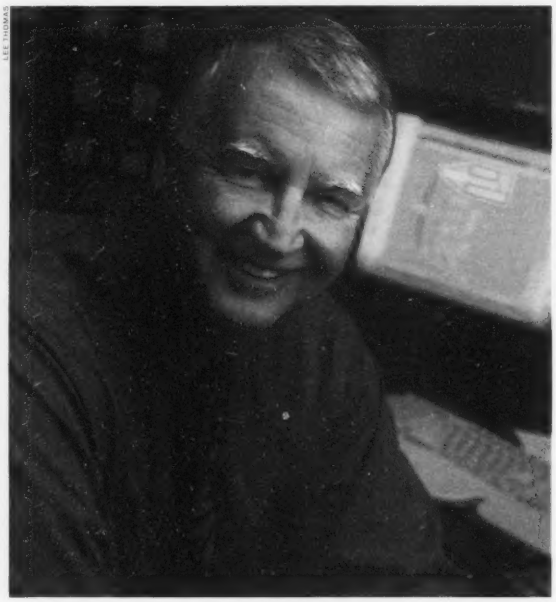

LEE THOMAS

The Thrill Of Crisis

WHO'S WHO IN IT

DBAs are often the last to be involved in planning but the first to be called when things go wrong.

THIS IS THE FIRST IN A PERIODIC SERIES EXPLORING HOW IT PEOPLE SEE THEIR JOBS.

GARY J. RUE

Job: Database administrator

Employer: Commonwealth of Kentucky

Years in IT: 32

Years in current specialty: 31

What is a database administrator? Someone who maintains and supports the database engine. In database administration, there are the people on the design and architecting of the database — the logical side — and then there's the physical component, where we take the logical and make it into the physical and administer the database after it's up and running. The area that I manage is more on the production and physical side of database support.

What is the most important contribution you make, and how do you make it? Our most important contribution is to keep the database running. It's an on-call function; you never know what might happen. Half the branch was up all night last night restoring a database because of a failure. Data recovery is very important, and so is performance tuning and problem solving. In IT, you tend to start at the back end and work out to see where the problem lies, so generally, we're one of the first areas that will be contacted when a problem occurs.

What is the most important IT skill or aptitude you need to do your job? We need to understand how the database engine works. We need to understand the technical components of the application environment, the processes within the environment and the relationships of all the people surrounding the environment. There's science, but there's art as well.

What is the most important "soft" skill or personality characteristic you need to do your job? We have to be good sounding boards. We have to help others identify and solve their own problems. They tell us what they think is wrong, but we have to get them to see outside of where they think the problem is, because if they really knew, they wouldn't be talking to us in the first place. A good database administrator has to see the relationships among the technology pieces, the people, the systems. We have to see the bigger picture and relate it. Sometimes we have to take a very technical piece and translate it to people at all levels of technical knowledge. That's hard to do.

What is the biggest misconception about what you do? We're a very tactical group — we have to be. But there's a strategic part of what we do so we can apply the tactical parts appropriately. For example, a developer says, "Create these tables." But for us to really do a good job, we need to know why. We need to know how and when those tables are going to be accessed. We need to understand the system so we can apply appropriate security. We also have to understand what type of data recovery scenarios we need to address, how and when to do the backups and where they will be stored. And we need to go through all types of scenarios to adequately recover that database.

What do you like best about your job? The people we work with. The systems people, developers — they're all problem solvers. They're all smart, creative IT people. And being in support, a crisis is always just around the corner. I like the thrill of the crisis. I like being put on the spot to find a way to solve a problem.

What do you like least? I don't like to take care of problems that, if I'd gotten enough information upfront or the right information, we could have dealt with it then. I don't like to put something in production and then have to fix it because future possibilities hadn't been considered.

What should IT people know about your role? Today's developers have databases on their desktops, so they think they're mini-DBAs. When we get involved, it's always after the implementation. Lots of issues could have been addressed if we had been involved earlier in the development process. Also, we do have a recovery role, and we should be asked about the recovery possibilities when a database goes down. IT people sometimes think they know how to recover, so generally we get brought into it because they have recovered incorrectly.

What should business people know about your role? Business people think IT can do anything, but they need to know that there is a cost associated, and sometimes the cost is too high to implement certain features. There are still priorities you have to set.

What would enable you to do your job better? Having more database tools and early interaction during the development process.

If you were not a data architect, what would you be? A detective. Trying to dig information out of people, the ability to look at disparate pieces of information and apply them appropriately to determine how an event happened — you have to be a little bit of a detective as a DBA.

How does the future look for your role? I think of us as the hub. The business user, the developer, the operations person, the systems person — they all relate to the database in some way. Our job changes slightly with new technology, but I think a DBA will be a very, very important role for years to come. And besides, everybody needs someone to point the finger at. **48695**

Interview by Kathleen Melymuka. Rue can be contacted at gary.rue@ky.gov.

From IT Governance To Hacking

Recent management books provide tips on IT governance, CIO survival, agile project management and understanding hackers.

BOOK REVIEWS

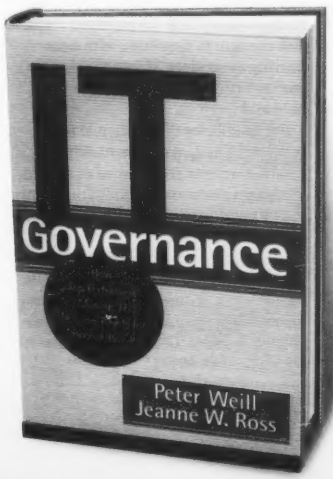
IT Governance: How Top Performers Manage IT Decision Rights for Superior Results, *by Peter Weill and Jeanne W. Ross (Harvard Business School Press, 2004; 269 pages, $35).* IT governance is a pressing issue these days, particularly since technology spending accounts for up to half of all capital expenditures at many companies. But few managers can accurately describe IT governance within their companies, much less quantify the impact of good governance on their bottom lines.

Weill and Ross, research scientists at the Center for Information Systems Research at MIT's Sloan School of Management, do just that and more. For instance, a CISR study of 256 global companies reveals that the profits of companies with top-notch IT governance practices are 20% higher than those of companies with poor IT governance.

More important, the authors thoroughly describe what IT governance is, classify the approaches used to govern IT and offer advice on how to set up an IT governance committee.

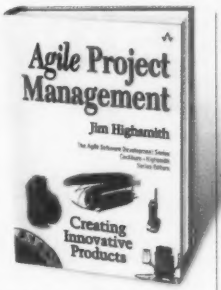
While the authors acknowledge that there is no one-size-fits-all approach to effective IT governance, their research finds that companies that are focused on either profits or growth tend to have similar governance models.

The book is aimed at for-profit companies, but it has a chapter devoted to government agencies and not-for-profits. This is highly recommended reading for anyone who's struggling with these issues.



Agile Project Management: Creating Innovative Products, *by Jim Highsmith (Addison-Wesley, 2004; 277 pages, $34.95).* Although agile software development has been practiced for several years, many companies continue to be hampered by process-laden, top-down project management approaches. Enter agile project management, a more responsive and flexible approach to project management. This approach places more authority in the hands of project leaders and line workers who are doing the executing while concentrating on delivering customer value.

Don't assume that agile project management is "PM lite." In Highsmith's view, agile project management doesn't dismiss the importance of effective quality assurance, documentation or testing, but it does de-emphasize them as core principles.

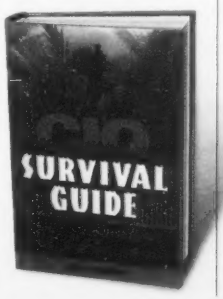


Instead, Highsmith effectively cites forward-thinking project management principles that have been espoused by his peers and pulls them into a cohesive, usable approach. He also goes to great lengths to explore the single most critical component of effective project management: people.

CIO Survival Guide: The Roles and Responsibilities of the Chief Information Officer, *by Karl D. Schubert (John Wiley & Sons, 2004; 294 pages, $45).* This up-to-date how-to book is useful for seasoned CIOs as well as newcomers who have recently transitioned into the role.

Schubert, a former chief technical officer at Dell Inc. who's currently chief operating officer at network storage provider Zambeel Inc., offers readers a logical approach to the CIO's role and challenges, including tips on building relationships with company executives, business partners and other key constituents.

Particularly useful are checklists such as "Ten Questions the CIO Must Ask the CEO."



Schubert's work draws upon insights from several leading management gurus, including Harvard Business School's Clayton M. Christensen and John Seely Brown. This book is a good read for any CIO who's trying to thrive or simply survive.

Know Your Enemy: Learning About Security Threats, *by The Honeynet Project (Addison-Wesley, 2004; 768 pages, $49.99).* Founded in October 1999, The Honeynet Project (*www.honeynet.org*) is a nonprofit research organization of security professionals who built a computer network, wired it with sensors, put it up on the Internet and recorded what

happened. (The actual IP address isn't published and changes regularly.) Hackers' activities are recorded as they occur: how they try to break in, when they're successful and what they do once they break in.

This is a fairly technical read with quite a bit of information about how honeynets work and what goes into both Unix and Windows computer forensics. But the authors also provide a detailed sociological analysis of the white-hat and black-hat hacker communities, including an extensive examination of their motives. **48699**

— Thomas Hoffman

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EXEC TRACK

CXO Names CTO

ALOK BATRA has been named chief technology officer at CXO Systems in Waltham, Mass. In his previous role as vice president of engineering, Batra led the development of the company's management dashboard products. He co-founded Dashboard Systems, which is now CXO Systems.

Transplace Picks Cashman for CTO

ROY CASHMAN has joined Transplace Inc. as CTO. Plano, Texas-based Transplace is a transportation logistics management provider. Previously, Cashman was CIO at Ruan Transportation Management Systems.

Carver to Head IT Unit at Dana Corp.

BRUCE C. CARVER is now CIO at Dana Corp., an automotive products manufacturer in Toledo, Ohio. Previously, Carver was division CIO for PepsiCo Beverages and Foods, a unit of PepsiCo Inc., and CIO at The Reynolds and Reynolds Co., a provider of automotive software.

Certoma to Lead IT At Wachovia Unit

SUSAN CERTOMA has joined Charlotte N.C.-based Wachovia Corp. as CIO of the company's corporate and investment bank. Previously, she was a vice president in the global sales technology organization at Goldman Sachs & Co.

Holeman Moves To Sentient Jet

DAVID HOLEMAN has been named vice president of IT at Sentient Jet Inc., a Norwell, Mass.-based private jet service. Holeman will be responsible for specialty technology as well as for CRM and call center technology. He was previously CIO at Monitor Group in Cambridge, Mass.

GOPAL K. KAPUR

Intelligent Disobedience

DISCUSSIONS with project managers about the key causes of failed and challenged projects always raise two primary issues: half-baked or harebrained ideas becoming projects, and excessive scope creep.

Traditionally, senior management is charged with conceiving ideas that will drive the organization toward profitability and industry leadership. Hence, there is immense pressure on executives to deliver innovative ideas that can be turned into products and services for profit and competitive advantage. Unfortunately, these visions are often intertwined with any number of half-baked and, at times, harebrained ideas. When half-baked and harebrained ideas get communicated to them, many project managers don't object because of a culture of not questioning the senior people. The general thinking is, "How could they be wrong?"

GOPAL K. KAPUR is president of the Center for Project Management in San Ramon, Calif., and author of *Project Management for Information, Technology, Business and Certification* (Prentice Hall, 2005). Contact him at

Another big contributor to failed and challenged projects is the inevitable scope creep. We all know that at times customers can be unreasonable and unrealistic in their expectations, but they're also subject to external pressures they can't control — government regulations, competitive positioning, emerging opportunities and the classic "silver bullet" syndrome, also known as Management by Magazine. (This occurs when the customer reads an article on an airplane while 35,000 feet over Kansas and forms a new vision.)

But forcing the team to agree to continuous scope creep is clearly not the solution. And you get hit with a double whammy when projects are built around half-baked ideas. A half-baked idea that turns into a project with extensive scope creep is a nightmare.

What can project managers do to minimize these problems? Simply stated: Learn to say no.

Of course, project managers may feel that they don't have the ability or wherewithal to say no and that their only option is to do as they're told, even though they know that the outcome may harm the organization. This begrudging compliance is an unfortunate attitude in any circumstance. In the extreme case, it can lead to disaster.

This is where the concept of intelligent disobedience comes into play. Intelligent disobedience is a trait clearly illustrated by guide dogs for the blind: At an intersection, based on traffic sounds and a general sense of safety, the blind person initiates the move to cross the street, giving a signal to the dog. If traffic is blocking the crosswalk, however, the guide dog will disobey the move-forward command. In guide-dog training lingo, intelligent disobedience is the dog's response when it senses that the path ahead is dangerous. It disobeys even though the owner wants to proceed.

Now consider a different scenario: The dog disobeys the owner's command because it sees traffic blocking the intersection. The dog's owner punishes the dog for its disobedience until the dog finally proceeds. You can imagine the consequences.

It's important to note that dog owners are trained to trust their guide dogs because the two have to work as a team for the protection and safety of the owner.

The essence of the intelligent disobedience behavior as it applies to project managers is to say a firm "no" to the demands of executives and customers when such demands will put the project, and hence the organization, in harm's way. Humans are supposed to be smarter than dogs, but it's amazing how difficult it is to teach humans to exercise intelligent disobedience.

Intelligent disobedience requires empowerment and trust. It's important that project managers be well trained in reading the danger signals and empowered to push back when they believe that a proposed project will put the organization in harm's way or that the requested scope creep will create undue risk. Project sponsors and customers have to learn to trust their project managers to do the right thing.

Unfortunately, project managers can't change the culture on their own because many lack the political chips and the skill to negotiate with overbearing executives and unreasonable customers. They need the sponsor's help and support.

For intelligent disobedience to become accepted, sponsors must work to establish an environment of open and forthright communication with trust and respect for their project managers.

Whether project managers react with intelligent disobedience or begrudging compliance largely depends on the organization's culture. Are project managers in your organization encouraged to practice intelligent disobedience? **48678**

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7:30am to 8:00am	Registration and Networking Breakfast
8:00am to 8:15am	**Rebuilding the IT Foundation** Maryfran Johnson, Editor in Chief, Computerworld
8:15am to 8:45am	**Consolidation and the Data Center: Boosting Business Performance and Application Availability** Richard Villars, Vice President, Storage Systems Research, IDC
8:45am to 9:15am	**User Case Study — Hilton Hotels: Considering the Next Generation Network** Damien Bean, Vice President, Corporate Systems, Hilton Hotels
9:15am to 9:45am	**User Case Study — MasterCard International** Jerry McElhatton, Senior Executive Vice President, Global Technology and Operations, MasterCard International
9:45am to 10:15am	Refreshment and Networking Break
10:15am to 10:45am	**Infrastructure Makeover: Moving the U.S. Air Force Toward Network-Centric Services Delivery** Brigadier General Brad Butler, Deputy Chief Information Officer, U.S. Air Force
10:45am to 11:15am	**Customer Challenges and Solutions: Real-Life Scenarios Connecting Data Centers Over Distance** Steve Adolph, CTO, Enterprise Solutions Group, CIENA
11:15am to Noon	**Panel: Overcoming Management Barriers — Making the Case for Consolidation** Panel Moderator: Don Tennant, News Editor, Computerworld Panelists: Damien Bean, Vice President, Corporate Systems, Hilton Hotels; Frank Enfanto, Vice President, Operations Delivery & Information Security, Blue Cross Blue Shield of Massachusetts; Steve Goldman, Director, Network Architecture, Chicago Mercantile Exchange; Ron Kifer, Vice President, Program Management, DHL Express; Jerry McElhatton, Senior Executive Vice President, Global Technology and Operations, MasterCard International
Noon	Program Concludes

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Editor in Chief, Computerworld

Brigadier General Brad Butler
Deputy Chief Information Officer U.S. Air Force

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IT PROFESSIONALS

Senior Manager, Strategy and Operations

(Glen Mills, Pennsylvania and other locations through the U.S.). Lead sales pursuits and execution of re-engineering projects from conception to final delivery in the area of strategy and operations as well as supply chain and procurement assignments for clients. Responsible for industry and client financial and strategic analysis, modeling and business case development. Responsible for New Product Development Stage Gate Processes, strategic procurement and sourcing, advertising effectiveness, SAP Process design and configuration and Trade Promotion Management within the Consumer Business Industry. Manage performance of projects including identification of issues, root-cause analyses, the structuring of solution frameworks, financial analysis and modeling and data analysis. Lead vendor discussions and negotiations, and act as the primary interface with senior client executives. Supervise client change management programs, including enterprise-level constructive communications. Responsible for recruitment of engagement teams, supervising Consultants at various levels, providing direction to the team and providing feedback on their performance. Responsible for systems selection and implementation, including ERP, e-sourcing and new product development. Create tools, frameworks and methodologies to develop intellectual capital. Responsible for trade promotions management including best practices and supporting technology.

The wage offered is $135,000 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The minimum requirements are as follows: Bachelor's degree in Business Administration, Operations, Finance or Management + 7 years of experience in the job offered or 7 years of experience as a Senior Manager, Manager, Senior Consultant, Consultant, Account Director, Account Manager, Account Executive or related occupation. Employer will regard a foreign degree to be equivalent to a US Bachelor's degree as determined by an accredited academic credentials evaluation service. Related experience must include at least 2 years with Sales and Merchandising Strategy in account management, SAP process design and configuration, Trade Promotion Management, and New Product Development, including experience with the Stage-Gate process, strategic sourcing and project management with consumer product and retail industry segments as well as Consumer Business Strategy and Operations.

Please send your resume, referencing Job Order Number **WEB448386** to the: PA Careerlink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

IT PROFESSIONALS

Senior Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.). Perform accurate analysis and effective diagnosis of client issues and manage day-to-day client relationships and project teams. Responsible for assisting client organizations in developing roadmaps to establish customer analytics environment and support business growth. Evaluate the existing customer care processes including Siebel implementations for telecommunications industry clients and define, develop and deliver training programs to enhance user acceptance. Perform business process reengineering, strategic planning and knowledge management related to development and implementation of new business and system processes. Define systems strategy, develop system requirements, administer testing and training, and define support procedures for systems including CRM systems (Siebel), and application portal (Broadvision). Identify and evaluate control structures, especially for IT-enabled processes. This includes identification of inadequate practices, testing of control systems, recommending measures for improvement, and establishing plans for ongoing monitoring. Actively evaluate client's systems in relation to the competitive landscape, identify efficiency frontier and develop reinforcing activities and capabilities for sustainable competitive advantage.

The wage offered is $95,000 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The minimum requirements are as follows: Bachelor's degree in Computer Science, Engineering (any), Management Information Systems or Business Administration + 2 years of experience in the job offered or 2 years of experience as a Senior Consultant, Consultant, Systems Analyst or related occupation. Related experience must include at least two years of consulting experience in the telecommunications industry with at least one year of CRM Systems knowledge including Siebel development and Broadvision. Please send your resume, referencing Job Order Number **WEB448348** to the: PA Careerlink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

Recognition Algorithms Dev Engineer - Recognition problem classification w/respect to real-life images & analysis of system requirements. Mathematical formalization of specific recognition problems using Probability Theory, Neural Networks, Pattern Recognition & Metastroke Theory. Development of program architecture & interfaces. Development of algorithms of statistical data analysis. Image processing algorithms, algorithm & SW development for field location on forms, form removal, document structure analysis, phrase & word segmentation. Implementation of algorithms using C/C++ & Assembler in actual recognition products. Tuning & customization of recognition products for specific data sets. Optimization, support & improvement of the code for Win & UNIX platforms. BS Comp Sci or related field + working knowledge of Algorithms development & implementation; Probability Theory, Statistics, Neural Networks and Metastroke Theory; Document analysis for handwriting recognition; C/C++ & Assembler. $70k/yr. M-F. 40 hrs/wk. Boulder, CO. Must have proof of legal authority to work permanently in U.S. Application by resume only to Workforce Development Programs, PO Box 46547, Denver, CO 80202. Ref job# CO5088878.

SENIOR SOFTWARE ENGINEER. Responsible for design of back end products (Service Monitor) used by company's major products. Design XML/COM property set based communication architecture between back end and high level front ends using Visual Basic script. Design silent script based setup program for remote deployment. Design libraries, programming tools and unit testing tools for Service Monitor programming environments. Supply samples and programming guidelines. Responsible for technical lead and training with Microsoft technologies, Visual Basic and Visual C++ multitier applications using WIN32, ATL, COM, COM+ and NET. Responsible for WIN32 and COM design and programming technical support. 40 hrs/wk. Bachelors degree in Computer Science. 4 yrs. exp. in job offered or 4 yrs. related exp. in software engineering and/or consulting. $101,008/yr. Apply at the nearest Employment Security Commission office of North Carolina or submit resume to Employment Security Commission, 742-F East Chatham Street, Cary, NC 27511. J.O. # NC5705907 and DOT code 030.062-010. All resumes must include applicant's Social Security Number. AD paid by an Equal Opportunity Employer.

Seeking qualified applicants for the following positions in Memphis, TN: Senior Business Systems Analyst. Develop major applications systems requirements, testing and controls. Requirements: Bachelor's degree or equivalent* in business, computer science, engineering, mathematics, MIS or related field, plus 5 years of experience in systems planning and design or systems development and integration. Experience with mainframe systems support, invoicing/revenue testing, and writing and executing test plans and test scripts also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to David Hanks, Federal Express Corporation, 3680 Hacks Cross Road, Bldg H, 1st Floor, Memphis, TN 38125. EOE M/F/D/V.

Oracle Clinical Consultant to plan, design study in Oracle Clinical 4.0; develop DCMs, remote data entry screens, DCIs etc; design, develop validation procedures using PL/SQL in Oracle Clinical's validation module; develop SAS, SQL views using TOAD, SAS, Oracle Clinical; perform CRF designing, database building, randomization, query resolution, reporting, subject randomization algorithms using Oracle Clinical, Normiab, SAS, SPSS, Adobe Framemaker. Require: MS in CS, Computer Engg or Statistics and 6 months exp in Oracle Clinical, SAS. Competitive salary, F/T, travel involved. Resumes to: Scott Bryant, Judge Technical Services, Inc. 3 Davol Square, Suite 3A, Providence, RI 02903.

COMPUTER

T&T Solutions seeks Software Engineers, Sr. Software Engineers, Systems Analyst, Oracle Apps., technical consultants etc. Salary commensurate w/education & exp. Fax resume to (818) 676-1272 or e-mail to jobs@ttsus.com c/o HR Dept.

SYSTEMS ANALYST - Udr. sprvsn. analyze usr. telecomm. reqs. to install & improve syst. Req: BS in CS or Comp. Info. Sys. & fluency in Japanese & English. Resumes: Syscom USA, Inc. 55 Broadway, 17th Floor, NY, NY 10006. Attn: S. Sato.

Denso Manufacturing is looking for Process Engineer responsible for heat exchange process introduction (Evaporator area) including jig specs, control plans, ergonomics, leaks & scrap improvement. Min is BS with exp in XRD, Unix. Send resumes to One Denso Rd, Battle Creek, MI 49015. EOE.

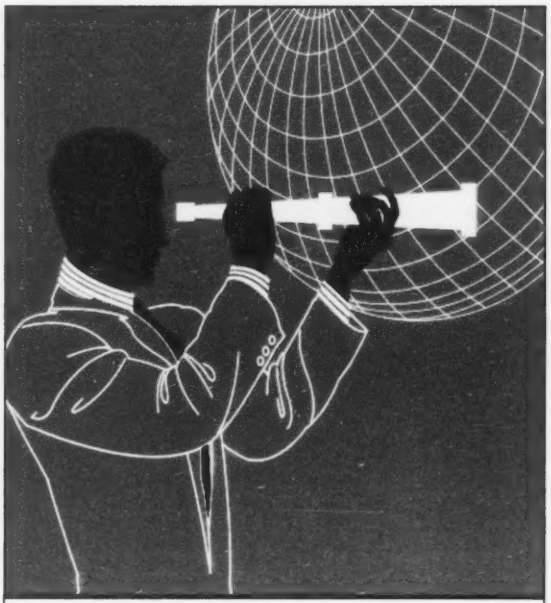
K&M Softech is looking for programmer/system system, software/project engineers, IT professionals. Both entry & experienced levels needed. Some positions require travel. Skills in C/++, VB, Oracle, SAP, SQL, Java are plus. Please send resumes to: Recruit@kmsoftech.com. EOE.

Systems Analyst II. BS in Comp. Sci. or rel field + 2 yrs rel exp, incl exp w/GAAP principles, insurance & mortgage business concepts & calculations & s/ware dvlpmt using Windows or Intranet/Internet platforms. Demonstrated oral & written communication skills. Send applications to Tej Dhawan, 1601 - 48th St., Ste. 220, West Des Moines, IA 50266.

Software Developer. Under senior supervision, analyze, design, implement and maintain software for banks in mortgage industry including consulting w/ financial projects; design and model databases on database servers; and develop new software not currently existing in the industry. Must have Bachelor's degree in Computer Science, MIS or related, 1 year experience in job offered or Software Engineer or related, and experience must include working with Java, Eclipse, XML, SWT/Jface, UML and Rational Rose. Send resume to Praxis Technology Group, LLC, Attn: Mark Loomis, 1500 NW 118th St., Des Moines, IA 50325.

In-Venture Soft is seeking IT consultants to design & develop applications for various projects. Applicants must have BS/MS with solid background in Oracle, WebSphere, Java, EJB, ASP. We offer competitive wage with full benefit. Travel maybe required. Apply at resume@itvsinc.net. EOE.

RouteOne, a joint venture developed to create a more efficient automotive finance process for dealers, has openings for IT professionals to develop Java applications. Qualified applicants must have BS/MS with IT experience. Please contact careers@routeone.com. No calls. EOE.



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Programmer Analysts to analyze, design, test, implement and maintain software systems in client server envir using C, Java, HTML, VB, ORACLE, MS Access, etc under Windows, UNIX OSs; write documentation to describe program development and logic; perform onsite/offsite maintenance, debugging, testing, and code optimization. Require: BS or foreign equiv in CS/Engineering (any branch) with 2 yrs exp in IT. Competitive salary. F/T, travel involved. Resume to HR, Ordusion Technologies, Inc., 3683 Rogers Bridge Road, Suite 504, Duluth, GA 30097.

Principal Software Engineer. Primary responsibility for the development of networking software. Responsible for functional spec dev, arch design, implementation and verification. MS or foreign equiv. in EE or CS plus 5 yr. exp. that must include 3 yr. with one or more network protocols including IP, TCP, ARP, DHCP, DNS, SNMP,and firewall. . Must be familiar with IP QOS protocols and RFCs. Must have development exp. with Linux, and in C/C++. Please send resume to Ucentric Systems, 2 Clock Tower Place, Suite 550, Maynard, MA 01754. Attn to Pat Riley.

COMPUTER PROFESSIONALS

Opportunities for:
- SYSTEMS/BUSINESS/ PROGRAMMER ANALYSTS
- PROCESS CAPABILITY ANALYST
- QC ANALYST
- WEB ARCHITECTS/ DEVELOPERS
- SYSTEMS ANALYSTS
- WEB GRAPHIC DESIGNERS
- NETWORK ENGINEERS
- PROGRAMMER/ANALYSTS
- SOFTWARE ENGINEERS

SKILLS:
- COLD FUSION • SPECTRA
- ORACLE • VISUAL BASIC
- VISUAL C++ • SIEBEL • ASP
- COM, DCOM • JSP • HTML
- JAVA, JAVA BEAN • EJB JAVA SERVLETS • WEBSPHERE
- IBM MQ SERIES • XML,UML
- MTS • CLARIFY • PERL
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Chief Information Officer *position in large multi-platform data center responsible for providing leadership to high performance management team in complex social services agency.*

Represents agency in meetings with federal, state and legislative officials. Requires current technical experience and demonstrated expertise supporting IBM ES9000 MVS/ESA/IMS/DB2, UNISYS A19 MCP/ DMSII, AIX/Unix/Oracle, and LAN/Novell. Experience with internet applications design and development, desired. Background and experience with federal oversight agencies is highly desirable. Demonstrated success in public administration with associated regulatory and state oversight entities highly desirable. Requires interaction with stakeholders and external interested parties regarding complex, highly visible projects.

STATE OF FLORIDA
CHILDREN & FAMILIES

Chief Information Officer

Requires effective interaction with customers and developers to ensure the successful delivery and implementation of projects, updates and modifications to the production environment. Must be able to work effectively with senior departmental managers as well as executives with other state agencies to achieve smooth and timely project development and conversion for clients. Desire strong background and demonstrated success in deploying productivity tools for workforce and agency processes. Responsible for charting agency strategic direction in client/server and distributed/decentralized processing. Qualifications: Excellent organizational, analytical, writing and public speaking skills are desired. A bachelor's degree from an accredited college or university and progressively responsible leadership experience in analytical and/or technical data processing fields. Prefer experience in a managerial capacity for a medium to large data center. Experience as described above can substitute on a year-for-year basis for the required college education.

Submit resume and/or State of Florida employment application to: Jo Moore, Department of Children & Families Technology Centre, 1940 North Monroe Street, Suite 80, Tallahassee, Florida 32399-0710; FAX (850) 487-8173; Jo_Moore@DCF.State.FL.US DEADLINE: 5 P.M., September 8, 2004. EEO/AA Employer/Veterans Preference. Those persons who require special accommodations during the selection process, should call Jo Moore at (850) 487-8169.

Sr. Database Specialist. Northern VA and unanticipated client locations in the U.S., needed to install, implmt., maintain & customize DB2 on OS/390, Windows and UNIX platforms, Incl related ISV program products & config. of SNA & IP netwk'g between platforms. Provide task mgmt. to d-base specialaists. Req. B.S. in CS, EE, Computing, or Math. Must have 8+ yrs of work exp. in job or as a DBA & knowledge of DB2 internals, DB2 DDF, BMC tools, DB2 tuning/design/security/backup & recovery. 40 hr/wk. OT as needed. Send copy of ad w/resume to Networking for Future, Inc., Attn: H. Fatemi, 1420 Spring Hill Rd., Ste. 600, McLean, VA 22102.

Sr. Software Developer needed to provide solutions to business & technical problems; dsgn & dvlp applic s/ware using Unix, C, C++, Java, Oracle, VB, UML, TCP/IP & Win NT; dsgn & dvlp automation systms on client-server architecture apply OO techniques. Resume to: Global Consultants, Attn: Hireme, 8800 Grand Oaks Circle, Ste 100, Tampa, FL 33637.

Software Development Manager - provide business software development solutions for Fortune 500 clients; engage in business modeling, analysis & design of complex software applications, architect & manage J2EE solutions for clients in the areas of portals, Content Management and Business intelligence/Data Warehousing using Cognos ReportNet, Crystal Reports & J Reports; lead a team of analysts/engineers in the design, development, testing & deployment of custom Cognos ReportNet on IBM Websphere platform using J2EE; implement all Rational tools including Requisite Pro, XDE, ClearCase & Clearquest; mentor development teams in technical aspects of J2EE, ATG-Dynamo, SAP, Cognos & Websphere. Requires BS (or MS) in computer science, information systems or engineering plus 5 YR progressive exp. (3 years with MS). Email resumes to Command Technologies, Inc., an MTC Technologies Company, at: ddubinskas@commtechinc.com

Software Engineer-Applications. Sought by Englewood Colorado consulting company to work in various unanticipated locations throughout the U.S. Duties: Develop, create and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. Analyze and design databases with an application area. Use of Novell, Visual Basic, C++, PowerBuilder, Java, ASP, PL/SQL, SQL, SQL Server and Windows NT. Reqs. Masters or equivalent in Computer Science, Computer Engineering, Engineering (any field) or related field. Plus 1 year in the job offered or 1 year in a related occupation, including Programmer Analyst, Systems Engineer or Software Engineer. Will accept a Bachelors degree plus five years of progressive experience in the field or related occupation in lieu of required education and experience. $73,231.00/year, 40/hrs/wk, 8AM-5PM. Respond by resume to WORKFORCE DEVELOPMENT PROGRAMS, PO Box 46547, Denver, CO 80202, and refer to Job Order No. CO5088416.

IT PROFESSIONALS

Technical Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.). Provide technology consulting services for public sector engagements involving implementation, testing, development, maintenance and enhancement of software packages and applications utilizing Object-Oriented design and analysis, Oracle 9i, MS SQL, Javascript, Java, VB Script, CGI scripting, server administration skills, Visual Basic, C, C++ and Pascal, as well as IBM MQ Series, PAM and Solaris. Participate in formulating and defining computer information systems scope and objectives through research and fact-finding to develop or modify information systems tailored to client management requirements. Prepare detailed technical and business requirements from which software will be written. Analyze and revise existing system logic and documentation. Supervise systems analysts and programmers conducting any of the above activities.

The wage offered is $75,780 per year. The work schedule is Monday-Friday, 8:30 am to 5:00 pm. The minimum requirements are as follows: Bachelor's degree or foreign equivalent* in Computer Science, Engineering (any type), Management Information Systems, Computer Information Systems or Math + 2 years of experience in the job offered or 2 years of experience as a Consultant, System Analyst, Web Developer, Database Administrator or Programmer. Prior consulting and project/team management experience must include system analysis, design, implementation, testing and deployment for Public Sector client engagements using Object-Oriented design and analysis, Oracle 9i, MS SQL, Javascript, Java, VB Script, CGI scripting, server administration skills, Visual Basic, C, C++, Pascal, as well as IBM MQ Series, PAM and Solaris.

*Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited educational evaluation service.

Please send your resume, referencing Job Order Number WEB447614 to the: PA CareerLink, FLC Unit, 235 West Chelten Avenue, Philadelphia, PA 19144. EOE

Software Engineer-Applications

Design and develop software application solutions for the investment banking/financial, telecom and IT industries. Must have Masters Degree in Computer Science or in a related field & 2 yrs. exp. or 2yrs. exp. in a related position w/ability to use: JavaScript, Struts, Lynx Framework, and Pro*C. 40.0 hrs./wk 8:00 AM - 6:00 PM.

Applicants send cover letter and resume to: Cyber Korp, Inc.,400 West Lake Street, Suite 216, Roselle IL 60172-3572, **Attn: HR MGR**.

Support Mgr. Dallas, TX. Manage team of prof. support consultants & provide back end support in deployment, installation & troubleshooting of Amtrix & TSIB; liaison w/develop. team in integration, stress & load testing of Amtrix & TSIB. Use Weblogic, Exceed, AMTrix & TSIB; Oracle 8i & 9i on Unix & WinXX OS. Req: BS in comp sci & 1 yr exp AMTrix integration, configuration, support & troubleshooting. Resumes to: M. Williams, Viewlocity, Inc., 3475 Piedmont Road, Suite 1700, Atlanta, GA 30305.

Sr. Systems Analyst/Project Mgr. needed to lead analysis of client bus. process/acctg. requirements for implement. of custom ERP business/acctg. software. Requires degree + exper. & Microsoft Navision certification. Exper. must incl. Gap-fit anal., reporting; Microsoft C/SIDE programming, demonstrated understand. of gen. acctg. procedures. Based in Santa Monica, CA - Travel up to 80% to client sites in N. CA & S. CA. Send resume to: S. Mauser, Specialists in Custom Software, 2120 Colorado Ave., Suite 150, Santa Monica, CA 90404. Must be able to work without employer sponsorship.

Software Developer - Austin, TX. Use S1 corp standard dev tools & project method to develop, install & test solutions to specific user tech & bus. problems within context of S1 Bank products using Borland Delphi 7. Req: BS comp sci, engg, or related, 2 yrs consultant or engg. & knowledge of Delphi, java, UML design tools, ISS, SQL, and ClearCase. Perm US workers only. Resume to N. Green (TX), S1, Inc., 3500 Lenox Rd., Ste 200, Atlanta, GA 30326.

Proj/Analysts to analyze, design software appls using C, C++, Compile Tools, Oracle, Informix-4GL, Informix Online, SQL Server, OR Java, JSP, Servlets, XML, ASP, Visual Basic, EJB, JavaScript, HTML, DHTML - under Windows, UNIX OSs; design APIs for backup/recovery framework; provide on site maintenance support such as debugging, modifications, fine tuning & code optimization. Require: BS or foreign equiv. in CS/Engg.(any branch) & 2 yrs of exp. in IT. F/T, competitive salary. Travel involved. Resumes to: HR, Semafor Technologies, Inc., 3300, Holcomb Bridge Road, Ste212, Norcross, GA 30092.

COMPUTER PROFESSIONALS: Radiant Systems, Inc. a Nationwide Technology provider located in NJ, CT, TX & FL req. Professionals w/ Hardware &/or Software skills. Incl: C, C++, Java, JavaScript, XML, UML, Perl, HTML, SQL, Pro*C, VB, PB, VC++, MFC, SDK, GuptaSQL, Informix, Crystal Reports, Sybase, Dev 2000, LotusNotes, Unix, WinNT/95/XP, RTOS, Sun OS, Help Desk/PC-Support, SAP, R/2-R/3, ABAP/4, SAP Scripts, PeopleSoft, IDMS, AS/400, COBOL/CICS/ DB2, MVS, RPG/400, SQA, WinLoadRunner, SNMP, COBRA, ASP, Active-X, DTM/TDMA, FDMA, Routers, DSP/ATM, FRAME RELAY, TCP/IP, ISDN, DCOM, COM, PL/1, SAS, VxWorks, VHDL, SONET/ SDH, SNMP, HP OpenView, Proj Mgr, Tech Writers Candidates w/a BS(or equiv). & 2yrs exp. as P/A and/or MS (or equiv) & 1yr exp. as S/E. Travel & reloc., req. to anywhere in USA as assigned. Excel. Benefits. E-Mail: radiants@radiants.com Attn: H.R. Dept. 109-A Corporate Blvd., S. Plainfield, NJ 07080.

IT PROFESSIONALS

Senior Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.). Responsible for the analysis, design, development, testing and implementation of Data Warehouse, Data Mart and Business Intelligence solutions and other related application development to ensure that implementations meet technical requirements, including those for performance, and disaster recovery. Responsible for gathering functional requirements, defining technical architecture, system implementation and client management. Utilize technical expertise in all stages of the software development life cycle, including the planning, analysis, design, development, and testing stages. Perform logical and physical data modeling, optimize database performance, and develop backup and disaster recovery strategies. Utilize PL/SQL to combine database and procedural programming language in Oracle. Responsible for writing technical documentation of projects and transferring knowledge to clients in order to support the application upon completion of the project. Responsible for logical and physical data models for Data Warehouses and Data Marts utilizing ERWin, designing universes and reports utilizing Business Objects and Web Intelligence Online Analytical Processing (OLAP) tool, and data extract, transform and load (ETL) functions using Informatica. Participate in the installation, configuration, design and development of Relational Database Management Systems, including Informix, Sybase and Oracle systems as well as the Business Objects and Web Intelligence OLAP tool and Informatica ETL tool. The wage offered is $92,000 per year.

The work schedule is Monday-Friday, 8:00 am to 5:00 pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Engineering (any) or Business Administration + 5 years of experience in the job offered or 5 years of experience as a Senior Consultant, Consultant, Engineer or related occupation. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited credentials evaluation service. Related experience must include at least one year with Relational Database Management Systems (Oracle, Informix and Sybase), SQL, PL/SQL, ERWin for data modeling, Business Objects and Web Intelligence OLAP tool, and Informatica for data extraction, transformation and loading (ETL). Please send your resume, referencing Job Order Number **WEB447641** to the: PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE.

Computer Programmer/ Analyst wanted by IT company located in Southfield, MI. Must have B.S. in Computer Science and 1 1/2 years exp. Respond to: Atrient Technologies, P.O. Box 250575, West Bloomfield, MI 48325.

CW080304EMWW.2

Engineering Manager: Job Duties: Lead a team of engineers for full chip level testing/verification from block to system level. Create test suites and testing environments. Direct and train Engineering team and co-ordinate testing/verification of system on chip integrated circuit designs. Assist research and engineering team with testing/verification of electronic circuits. Perform design validation of communication blocks/networking/consumer products using C/C++ on unix/windows environment. Create testcases from Architecture/Micro Architecture specification and develop test suites using perl/awk/sed and C-shell. Conduct trade-off analysis for various tools and flows. Validate/test processing systems and designs using FPGA. Conduct behavioral modeling of electronic circuits. 40 hrs. week. Salary $108,500/year. Master's degree in Science, Engineering or Technology with at least four (4) years of exp. in job offered or a Member of Technical Staff. Special requirements: Applying electronic series and concepts to integrated circuit design, development and testing for communication and networking products; Development of software and hardware for consumer communication products using HDL languages; Must be willing to relocate, if necessary. Send two (2) copies of resume/letters of application to: Job Order # 2004-077, P.O. Box 989, Concord, NH 03302-0989.

Systems Engineer. Temple Terrace, FL - develop telecom applications utilizing TELON, a computer-aided software engineering tool, information management system database/data communications (IMS DB/DC), COBOL and DB2; design and implement system solutions for business requirements to a national on-line ordering system, for the telecom industry, utilizing design methodology, software and hardware knowledge; provide support and troubleshooting techniques; analyze, design and implement solutions; provide customer support. Requires Bachelors degree in Computer Science and either 5 years experience in the job offered or 5 years experience in developing telecom applications utilizing TELON, IMS DB/DC, COBOL and DB2. Salary $63,100/yr, 40 hrs/week, 8 AM to 5 PM, Mon - Fri. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to Job Order #FL-2549132.

Texcel, Inc. seeks Lead Network Engineer in our Cleveland, OH loc. Creation & integration of advanced computer technologies into client environments. Identify & configure equipment, software/hardware, manipulate data & other components to meet client needs. Implement solutions individually or as part of a team. Must have Bachelors degree in Engineering or related field + 5 yrs relevant experience.

Resume to Texcel, Inc. CommercePark II, 23220 Chagrin Blvd., Ste 202, Beachwood, OH 44122-5409.

IT CAREER OPPORTUNITIES

CALIFORNIA - (Corporate HQ. Employment is throughout US): Programmer Analyst

MICHIGAN-Programmer Analyst

Positions require a BS and relevant experience; a combination of experience and college level education may be accepted. The flexibility to travel and be on-call may be necessary. Proof of legal authorization to work in the U.S. is required.

Please forward your resume to Computer Sciences Corp., Attn: J. Le, 2100 E. Grand Ave., Mail Code A209, El Segundo, CA 90245. Please indicate the specific location for which you are applying.

Lansa, Inc. is seeking a LANSA Latin America Sales Technical Support for Downers Grove, IL. Candidate will provide phone and on site pre and post sale technical advice to Latin American partners and manufacturing, distribution, financial, government and retail industry LANSA clients. Will build prototypes and proof of concept applications for prospective customers and provided post sale software guidance to insure client's LANSA projects are successful. Will review sales proposals to insure technical accuracy while using knowledge of application development involving the following: (1) User/Client interface: Windows Client, 5250/Character (2) RDBMS: DB2/400 and SQL Server. Will use knowledge of the following LANSA products: Visual LANSA, LANSA client, LANSA Open, RUOM, LANSA for iSeries. Will conduct post sale education classes on the use of these LANSA products and well as using knowledge of 3GL programming languages. Please fax resumes to (630) 874-7001 and reference job title when applying.

PROGRAMMER/ANALYST

Analyze, design, develop, test software applications to meet customer requirements. Applications need to be developed using C++, C#, .NET, CLR, VB, Java, MFC, ATL, COM/DCOM. Use the software tools such as Oracle, SQL Server, IIS, Web Logic Server, Rational Rose, CVS, Remedy, Clearcase, PVCS tracker. 8:00 a.m. to 5:00 p.m., $55,000/year, Bachelor's degree in Computer Science/Engineering. Five years of experience in job offered or related occupation such as software development. Must have proof of legal authority to work in the United States. Send your resume to the Iowa Workforce Center, 590 Iowa Street Dubuque, IA 52004-0757. Please refer to Job Order #IA1101900. Employer paid advertisement.

Computer
SOFTWARE ENGINEERS to design, develop, debug, implement, test and/or analyze computer software programs for applications. May assist in porting, documentation, and/or defining requirements. Analyze operational requirements; provide recommendations for software architecture and system performance optimization. All levels may require a Master's degree in Computer Science, Engineering, Business, Math, Physics, or related technical discipline, and 2 years work experience in designing, developing, and implementing software applications, including (1) RDBMS concepts and internals, performance tuning, and security, (2) SQL/PSQL code optimization, (3) defining software development lifecycle and architecture for technology stack integration, 4) developing software coding standards and procedures for enforcing standards compliance, and (5) designing infrastructure for software packaging, patching, release and deployment. Send resumes for all level and all types to: Oracle Corporation, 500 Oracle Parkway, MS # 3OP864B, Redwood Shores, CA 94065; Attn: Job Code: 385.6764. Oracle supports workforce diversity.

Primus Global Services, Inc., is seeking IT professionals in several areas: **Functional Consultants - Oracle DBAs** - Administer & consult on Oracle ERP & data warehousing solutions/implementations using Oracle 8i/9i & .Net on UNIX/Windows platforms. **Programmer Analysts - 1)** Program & implement XML web services & coding for Oracle & SQL Server back-ends using VB & .Net **or 2)** Code & implement web based applications for UNIX & MVS using COBOL, DB2, SQL & shell programming. Code user interfaces using IBM Web Sphere & MQ Series middleware. IBM's Apache Web Server, J2EE and JDK. **System Administrators** - support & maintain operations of UNIX server, networks, applications production & systems environments. Send resumes to jobs@primusglobal.com.

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500 Old Connecticut Path, P.O. Box 9171
Framingham, MA 01701-9171
Phone: (508) 879-0700
Fax: (508) 875-4394

PUBLISHER/CEO
Bob Carrigan
(508) 820-8100

EXECUTIVE ASSISTANT TO THE CEO
Nelva Riley
(508) 820-8105

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editor in chief
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CONTRIBUTING WRITERS

Mary Brandel, Russell Kay, Sami Lais, Robert L. Scheier, Steve Ulfelder

GENERAL INFORMATION

TELEPHONE/FAX

Main phone number . . . . (508) 879-0700
All editors unless otherwise noted below
Main fax number . . . . . (508) 875-8931
24-hour news tip line. . . (508) 820-7716

E-MAIL

Our Web address is **www.computerworld.com.**
Staff members' e-mail follows this form: **firstname_lastname@computerworld.com.**
For IDG News Service correspondents: **firstname_lastname@idg.com.**

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Letters to the editor are welcome and should be sent to: **letters@computerworld.com.**
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MAIL ADDRESS

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SP2

peak season," said Mike Jones, CIO at Circuit City Stores Inc. "While I'm happy to see that Microsoft has put out SP2 in response to known issues and weaknesses over time, it just doesn't work out timing-wise for us."

Jones said the Richmond, Va.-based retailer won't deploy SP2 until the first or second quarter of next year. And he was hardly alone in determining that the SP2 deployment will have to wait at least four months.

Fifteen of the 26 respondents who now have at least some XP in their desktop environments indicated either that they would wait until next year or that they had no near-term or set plans for SP2. The remainder said they plan to deploy SP2 when they complete testing, with three of them saying they expect that will be within two months and another within four months.

"We are very concerned about this service pack breaking some of our applications," said Bill Lewkowski, CIO at Metropolitan Health Corp. in Grand Rapids, Mich. "In fact, we had one of our vendors give us notice that their applications would not work."

That vendor was McKesson Corp., a San Francisco-based provider of health care applications, he said. Lewkowski added that he isn't sure when Metropolitan will finish testing SP2, since it will need resources and money that hadn't been budgeted. He said the IT department will work with its more than 400 vendors, but he isn't sure it will ever get to the point where it can deliver SP2 to its users.

But Steve Kleynhans, an analyst at Meta Group Inc., said his firm is advising companies to roll out SP2 as fast as they can. He said he expects it will take most companies four to six months to complete the certification and engineering process to prepare for the rollout. "SP2 is mandatory. You don't have a choice," he said. "Anything in the future is going to be built on SP2."

Yet the application compatibility problems that some companies are encountering can be difficult to work through. John LaBrue, a team leader in distributed computing at OGE Energy Corp. in Oklahoma City, said some applications that the IT department tested broke because of the new Windows Firewall.

MORE ON SP2
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"There are methodologies in place to disable the firewall, and we have deployed those in our test environment. We are still having issues," LaBrue said. "So it's not alleviating the problems we are experiencing."

LaBrue said OGE also has several custom applications for mobile data that are in a "broken state." Its Citrix Systems Inc. application also failed, but staffers stumbled upon a fix that worked, even though it wasn't designed for that problem.

In addition to concerns about application incompatibility and firewall issues, DHL Worldwide Network SA/NV is worried about SP2's size making it cumbersome to deploy to users who may be connected via slower network links, according to Meg Plummer, director of front-end services at the international courier.

The full SP2 package checks in at about 265MB, according to Microsoft. The average download is expected to be much smaller because of "smart download" technology that installs only what users need. For XP Professional, the SP2 download is expected to be about 100MB, Microsoft said.

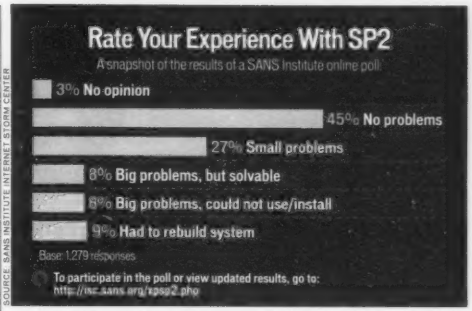
Preemptive Moves

Some companies have had to disable Automatic Update to make sure users don't download SP2 before they've had a chance to test their applications. John Foley, a network planning analyst at Werner Co. in Greenville, Pa., said that even though his company distributes security updates through an internal server, he made a change to the group policy setting in Active Directory to block users from downloading SP2 via Automatic Update or Windows Update.

Companies that rely on instructing users to disable Automatic Update run the risk of experiencing frustrating consequences. According to a source at a manufacturing firm who requested anonymity, two users there downloaded SP2, despite messages instructing them not to install it. Now the machines won't boot and must be fixed.

But SP2's timing will work well for some companies. Allstate Insurance Co. expects to start rolling out Windows XP on April 1 next year, so the company is doing SP2 and XP application compatibility testing at the same time.

Still, that's no small undertaking. Kevin Rutherford, a workstation strategist at the Northbrook, Ill.-based company, said Allstate has about 1,000 applications to test.



So far, Greg Lavigne, an Allstate systems consultant, has already observed that the insurer's WRQ Reflection terminal-emulator software has been flagged by Microsoft on a Web page carrying the headline "Some programs seem to stop working after you install Windows XP Service Pack 2."

Jon Murchinson, a Windows client product manager at Microsoft, said customers should take advantage of SP2's enhancements right away. But the company also recognizes the need for application compatibility testing, he said, and it recommends that customers test SP2 in a closed environment before rolling it out to their entire enterprises.
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Early SP2 Adopters Got Extra Help Solving Problems

Hawaiian Electric Co. got a dose of special attention whenever it encountered an application compatibility problem with Service Pack 2.

As part of Microsoft's Technical Adoption Program, the Honolulu-based power company worked closely with the vendor on the migration of its 1,200 desktops to Windows XP Professional, SP2 and Office 2003.

But even with assistance close at hand, Hawaiian Electric sometimes found it painful to deal with the shifting sands of multiple beta releases. The company often had to spend time determining whether a problem was caused by XP, SP1 or SP2 before it could seek a resolution, according to Les McCarter, director of IT infrastructure and operations.

McCarter said problems were more often related to XP compatibility – not to SP2. "We have not seen as many headaches with SP2 as has been purported out there," he said.

One problem that was traced to SP2 involved the company's Mincom Ltd. ERP software. McCarter said Microsoft investigated the matter and incorporated a solution into the next beta.

Other compatibility issues surfaced with the company's Xerox Corp. scanning software and with its voice-over-IP software. McCarter said that Hawaiian Electric also had to become skilled at configuring SP2's firewall to allow applications to communicate through it.

But McCarter noted that out of several hundred applications the company had to test, it found compatibility issues with only three. He added that the time spent implementing SP2's security improvements was "well worth it."

Another organization that made an early move to SP2 was the government of Fulton County, Ga. Its CIO, Robert Taylor, said the county had an agreement with Microsoft to participate in the testing of SP2.

Taylor said the county identified some application compatibility problems during prerelease testing, but it has encountered none since then. Only one of its vendors, Accela Communications, warned the county about deploying SP2, but not until last week, he noted.

– Carol Sliwa

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But if what you want is peace of mind, it's nowhere near enough.

Does that sound a little paranoid? Maybe it is. But I've purchased thrift-store PCs and junk-shop hard disks. And yes, I've scanned through their contents before repartitioning the drives. I've seen personal letters and business correspondence, contracts and legal papers, Social Security numbers and other customer data. All you need is to scan a few recycled hard disks to gain a healthy paranoia about junkers that contain valuable information. I've scanned dozens.

I've also seen the results of projects by researchers such as Simson Garfinkel at Sandstorm Enterprises, who found high-tech vendor source code, financial information from investment firms, thousands of credit card numbers and even internal Microsoft e-mails on second-hand hard disks he bought at swap meets and used-computer stores and on eBay.

So my peace-of-mind threshold is pretty high when it comes to data on high-tech junk. Maybe yours should be, too.

After all, that PC recycler may do a highly professional job of wiping your junked PCs' hard disks. But before that happens, those PCs will sit on your loading dock — then on a truck, then on the recycler's loading dock. There may be plenty of opportunities for someone to walk off with your data.

How do you keep it safe until it's wiped? The simplest answer: Use a $50 commercial software package to wipe the disks yourself, before they go to your loading dock. Then pay the PC recycler's fee to have them wiped again. Sure, that's a belt-and-suspenders approach, but it cuts the risk of a stolen junker exposing sensitive data. It also eliminates the single point of failure of one disk-wiping session.

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

But that's not the only small price you'll have to pay to protect your data. There's probably data hiding on other high-tech junk, too.

Backup tapes are easy enough to deal with. You *are* using a $100 bulk eraser to wipe them before you trash them, right?

You can also use that to handle many kinds of recordable media that users copy sensitive data with. That means floppy disks, Zip disks and cartridges for lots of other removable-media magnetic drives.

Then there are recordable CDs and DVDs, the bane of any IT shop that's trying hard to keep from leaking data. They're high-capacity, unerasable, tough to destroy and easy to drop into the wastebasket — which makes them easy pickings for anyone who decides to dig through your Dumpster.

How can you get rid of them? There's no simple, standard answer. People have tried microwaving, burning, sanding off the surface, even dissolving them in acetone. The easiest may be to run the disks through a heavy-duty paper shredder — that will run you $500 or more, but your office probably already has one.

But before you can shred those CDs or erase those Zip disks, you have to collect them from users. They may think you're a little paranoid for trying to track down every piece of high-tech junk that might contain sensitive data.

Just remember: All it takes is one large dollop of that data in the wrong hands to make your worst fears a reality. Compared to that, users thinking you're paranoid really *is* a small price to pay. 49071

Just Keeping His Options Open

For this online sales form, there are 60 pages of specs identifying whether fields are required or optional. "But during beta testing, the VP of sales goes ballistic because we don't let them submit a quote without the required fields," says developer pilot fish. "He tells us that the fields are only required if the user knows the information – otherwise they're optional." How can IT know if the user knows the information? "He replies that he's just responsible for the requirements," fish says. "It's our job to figure out how to do it."

SHARK TANK

Just Ask Him, OK?

When this pilot fish is laid off, he tries to convince his bosses that he should brief the people who will do his job. But they insist that the remaining staffers know all they need to know. "Fine," says fish, "ask them how to change the server-room combination lock." Turns out no one knows. Then what do the bosses do? "They called the building facilities group to change the combination," fish says. "*They* couldn't figure it out. So they spent $725 to have a new lock installed – all just to avoid calling me and asking a simple question."

Just What Fits

State agency's IT staffers do a careful job of spec'ing out PCs, but somehow many of the computers arrive with the wrong hard-disk capacity and missing options. What happened? "Seems the purchasing unit was using a purchase order form that could not hold the PC's entire specification, and there was no continuation sheet," sighs pilot fish. "We only got what would fit on the form!"

Just Like No Laptop At All

College registrar's office asks IT for laptops to use for the big class-registration day at the campus center. Why laptops? "For the convenience," an IT pilot fish reports. How convenient are they? "About an hour into it, the users decided they needed keyboards," he says. "Another half-hour later, they needed mice. By the end of the day, they were complaining that the screen was too small, so a 17-in. LCD was placed at each workstation."

Just in Time

For weeks, this IT pilot fish has been trying to resolve a critical issue after installing a big software vendor's flagship product. When he finally gets to the vendor's highest tech-support level, a programmer calls to tell fish that the problem was fixed in the most recent patch – it's fish's fault for not being up to date. Fish knows that's not the case, but he checks the vendor's site anyway. "Sure enough," he says, "a new patch had been added – that morning."

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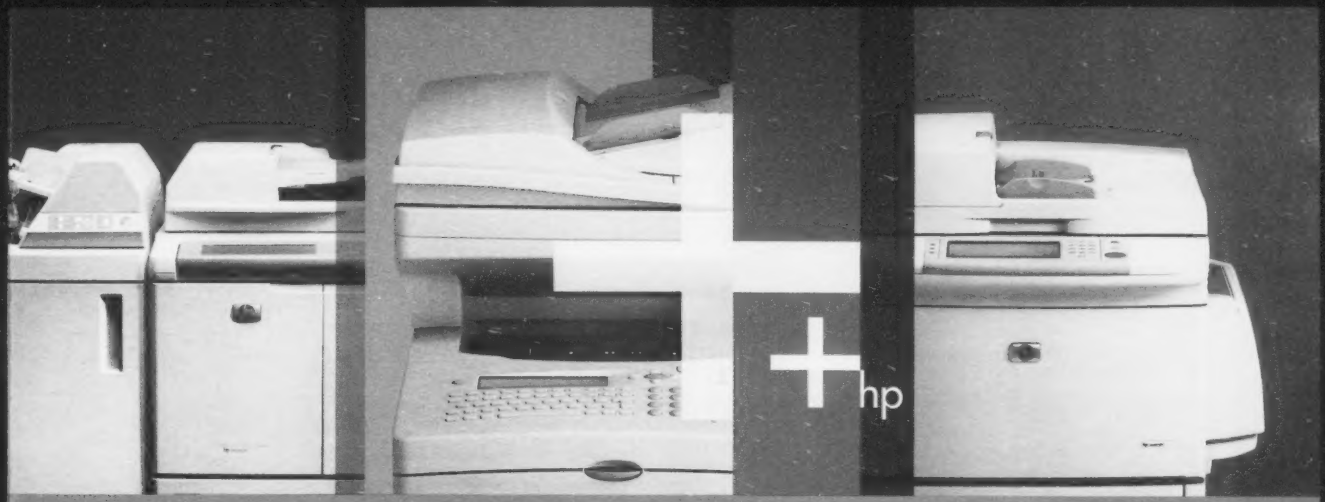

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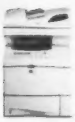

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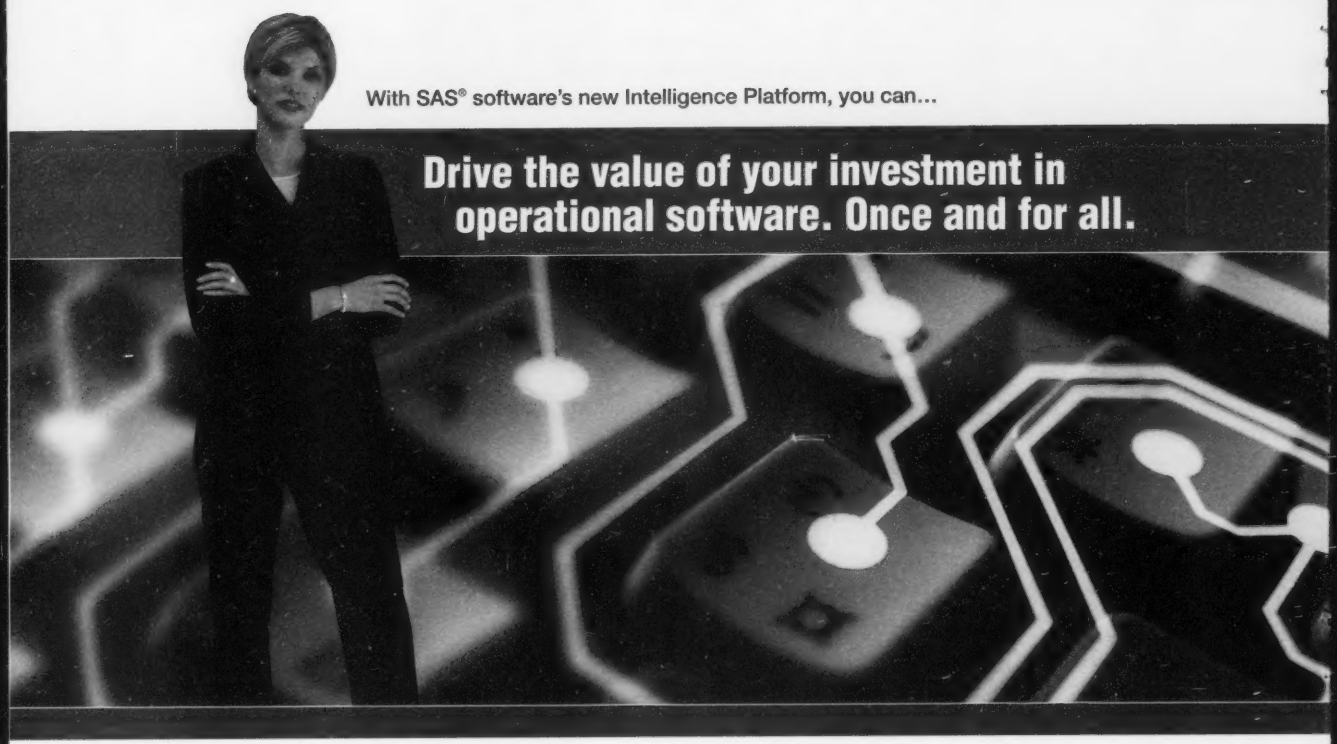

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